



**Economic Growth for the Prince William Sound Region Vision - Strategy - Action 2016 - 2021** 

### PRINCE WILLIAM SOUND ECONOMIC DEVELOPMENT DISTRICT



### **SOUND OPPORTUNITIES:**

**Economic Growth for the Prince William Sound Region** 

Vision - Strategy - Action 2016 - 2021

Comprehensive Economic Development Strategy
Prepared for the United States Department of Commerce







### **Table of Contents**

Section I: Executive Summary & Introduction
Part A: Executive Summary
Part B: Introduction3
Section II: Regional Background
Part A: Geography, Natural Resources, and Climate
Part B: Human Capital26
Part C: Civic, Social, and Cultural Resources30
Part D: Infrastructure, Utilities, and Transportation40
Part E: The Economy and Factors Affecting Economic Performance54
Section III: SWOT Analysis
Strengths, Weaknesses, Opportunities, and Threats
Section IV: Strategic Direction & Action Plan
Part A: Strategic Direction
Part B: Action Plan
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Osation V. Fredrickien Francisco
Section V: Evaluation Framework
Part A: Indicators of Regional Progress
Part B: Action Plan Evaluation Framework101
End Notes and Acknowledgements
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Section I: Introduction and Executive Summary

**Economic Growth for the Prince William Sound Region** 

### **SECTION I: EXECUTIVE SUMMARY AND INTRODUCTION**

### **Part A. Executive Summary**

**Sound Opportunities: Economic Growth for the Prince William Sound Region** is a comprehensive economic development strategy (CEDS) developed by the Prince William Sound Economic Development District (PWSEDD). It was developed in accordance with the requirements of 13 C.F.R. § 303.7. The planning process involved research, community meetings, surveys, and public comments.

For 25 years, PWSEDD has served as a state- and federally-designated regional development organization. It serves the communities of Chenega Bay, Cordova, Tatitlek, Valdez, and Whittier. The region is located in southcentral Alaska off the Gulf of Alaska.

The region's economy is largely based on activity in four traded sectors: Oil and Gas Production and Distribution; Seafood Harvesting, Production, and Processing; Marine Transportation and Support Services; and Tourism and Outdoor Recreation.

Economic activity in these sectors as well as local government and other local sectors provides a nominal level of prosperity in the region. In addition to economic opportunities, the region's residents place tremendous value on their maritime, rural, and subsistence lifestyles and balancing opportunities with stewardship of Prince William Sound.

Many aspects of the region serve as a foundation for its economic future. Among these strengths are the pioneering spirit of its residents, the beauty and scenic values of the area, the abundance of natural resources, a strong rate of new business formation and entrepreneurial spirit, and the availability and growth of maritime infrastructure and services.

Despite these strengths, the region must address both long-standing and emerging weaknesses. A small and declining population, the availability and readiness of a qualified

workforce, high operating costs - primarily due to transportation and energy, the uneven distribution of prosperity and opportunities across the region, and limited business support and innovation assets stand as limitations that hamper future economic opportunities.

Regardless of these limitations, opportunities for economic improvement are possible. Chief among these opportunities is developing a sustainable model for optimizing the Alaska Marine Highway System. Expansion and promotion of maritime infrastructure and services; continued development of renewable energy and promoting energy efficiency; increasing the business survival rate through planning, preparedness, and support; and establishing regional approaches to destination marketing are other top opportunities for the region.

The region is vulnerable due to its exposure to multiple natural disaster threats. Other top threats include the unstable and unresolved state fiscal crisis, ongoing instability in the global oil and gas sector, the pervasive impact of climate change, and a high degree of food insecurity.

As a result of the planning process, the PWSEDD established five strategic foci: workforce readiness and retention, business retention and expansion, expansion of key economic sectors, development of critical infrastructure, and increased regional cohesion. The action plan outlined in Section IV of this document identifies priority actions that PWSEDD will undertake during this planning period.

**Sound Opportunities** will position the region to more fully realize economic growth and achieve greater regional cohesion. It will help the region focus its time, talent, and financial resources on activities, projects, and programs that will improve the business climate, maintain and create economic opportunities, and advance a desirable quality of life.

### **B.** Introduction

#### **Purpose**

According to the Federal Reserve Bank, rural regions that are realizing economic success in the 21st Century have several common characteristics. Among these characteristics are a shared vision for the future and strong alignment and cohesion within the region's local governance and anchor institutions.

The Comprehensive Economic Development Strategy (CEDS) is a tool proscribed by the U.S. Economic Development Administration (EDA) to guide regional economic development efforts. It is an EDA mandated requirement of federally-designated economic development districts (EDD). A CEDS is a guiding document that serves to focus government, business, education, and civic entities around common interests and opportunities. It is as much a process as it is a final document.

Sound Opportunities: Economic Growth for the Prince William Sound Region represents the next phase of a continuous economic development planning and implementation effort. It serves as a full revision of the Prince William Sound Comprehensive Economic Development Strategy 2011 - 2016.

Sound Opportunities was developed in accordance with the updated requirements for a CEDS as specified in 13 C.F.R. § 303.7. Section I provides an executive summary, introduction, and context for the planning process. Section II features an extensive review of regional characteristics including natural resources and assets, human capital, infrastructure, and the economy. Section III uses the Six Pillars™ Framework to review the strengths, weaknesses, opportunities, and threats of and to the region's future economy. Section IV lays out the strategic direction and action plan for the region for the next five years. Section V specifies a framework by which PWSEDD will evaluate progress toward implementation of the CEDS.

**Sound Opportunities** is an extension of the five previous CEDS documents that have guided the Prince William Sound Economic Development District (PWSEDD) over the past 25 years. It builds upon these prior efforts, the region's experience and lessons learned, and the evolving global, national, state, and local circumstances that impact the region and its economy.

**Sound Opportunities,** when fully implemented, will position the region to more fully realize economic growth and achieve greater regional cohesion. It will help the region focus its time, talent, and financial resources on activities, projects, and programs that will improve the business climate, maintain and create economic opportunities, and advance a desirable quality of life.

#### **Prince William Sound**

Situated on a deeply notched inlet off the Gulf of Alaska, the Prince William Sound region is comprised of an area roughly seven times the area of the Municipality of Anchorage, Alaska's most populous city. The Chugach National Forest surrounds and encompasses the region's five coastal communities. Economic activity is focused on oil distribution and support services; the maritime sector, including marine transportation; seafood harvesting, production, and processing; and the tourism and outdoor recreation sector.

The region is described in detail in Section II of this document.

#### **Prince William Sound Economic Development District**

The Prince William Sound Economic Development District (PWSEDD) is the state- and federally-designated regional development organization for the Prince William Sound region. It serves the communities of Chenega Bay, Cordova, Tatitlek, Valdez, and Whittier with a combined population of 6,700.

PWSEDD was established in 1991 to address the need for a coordinated region-wide planning authority. It received designation as an Alaska Regional Development Organization (ARDOR) at that time. A decade later, the agency received federal designation as an Economic Development District. For 25 years, the PWSEDD has provided economic development planning services and assistance to the region.

PWSEDD is a nonprofit 501 (c) 6 organization. Its membership includes municipal and tribal governments, businesses, and other nonprofit organizations. It is governed by a board of directors comprised of appointed municipal and tribal representatives as well as directors elected by the membership.

Economic Growth for the Prince William Sound Region

#### **PWSEDD Board of Directors**

The following individuals have served on the PWSEDD Board of Directors and guided the strategy development process and CEDS document:

PWSEDD Board of Directors Officers						
President Patience Andersen Faulkner Cordova District Fishermen United Regional Citizen Advisory Council	Vice President David Totemoff Tatitlek IRA President					
<b>Secretary</b> Dan Blair Mayor of Whittier	<b>Treasurer</b> Dan Blair Mayor of Whittier					
Direc	ctors					
Larry Evanoff President Chenega IRA Council	David Dengel CEO/General Manager Copper Valley Telecom					
Ruth Knight Mayor City of Valdez	Mark Lynch City Manager City of Whittier					
Alan Lanning City Manager City of Cordova	Ricky Kompkoff Environmental Director Tatitlek IRA Council					

<sup>\*</sup> Indicates a former board member

#### **Strategy Development**

PWSEDD relied on a range of planning activities, public meetings, and other processes to develop this CEDS revision.

<u>Prior CEDS:</u> As a starting point, the PWSEDD evaluated prior regional strategies. These plans provided a long-term perspective on the region, past planning and implementation efforts, and insights on potential pitfalls and foundations for success. These documents as well as board discussion and reflections highlighted two shortcomings. Past plans either tended to be too broad or too ambitious. Despite these deficiencies, prior efforts did provide important historical information and a starting point for updating and expanding the regional analysis.

Other Planning Processes: Concurrent with the CEDS planning process, other important planning processes were also occurring. PWSEDD, in partnership with the Alaska Energy Authority (AEA), was facilitating the development of the **Prince William Sound Regional Energy Plan**. As part of this process, PWSEDD board members and staff participated in public meetings in each of the region's five communities. Additionally, follow-up meetings, interviews, and analyses were performed by the project contractor, WHPacific. All of these activities, plus the work-in-progress on the final report, helped to inform the CEDS process.

The U.S. Forest Service (USFS) was also engaged in revising the **Chugach National Forest Plan**. Because the forest is the dominant land unit in the region, reviewing the interim planning documents and public comments on the proposed plan offered the opportunity to consider hundred of issues from multiple viewpoints. A public comment period on the plan concluded in February 2016. PWSEDD encouraged regional entities to participate in this process. After the USFS finalizes its analysis of comments received, the revised forest plan will be publicly noticed for final rulemaking. The proposed plan does not call for any major changes in the management of the forest. However, it does create opportunities for new partnerships with the region's communities, tribal entities, landowners, and businesses across a wide range of issues including access, historical and cultural preservation, recreation and tourism, multiple use, energy, and more.

<u>PWSEDD Board</u>: The PWSEDD Board of Directors initiated the CEDS process in May 2015 with a day long planning retreat. That pivotal meeting refocused PWSEDD's 2016 Action Plan as well as set the stage for the CEDS revision process. The Board identified five focus areas during this meeting: workforce readiness and retention, business retention and expansion, expansion of key economic sectors, development of critical infrastructure, and increased

regional cohesion. An important outcome of the meeting was the determination to conduct a business climate survey to learn more about the challenges to and advantages of conducting business in Prince William Sound.

In addition to this initial planning meeting, the Board provided ongoing review and direction of the planning process, reviewed work-in-progress, and participated in board and community meetings throughout the year. Other key board meetings were held in January and April 2016. The January meeting brought focus to the State of Alaska's precarious financial status and the urgent need to address risks to the Alaska Marine Highway.

The April meeting featured presentations from the Alaska Marine Highway, Alyeska Pipeline Service Company, the Alaska Department of Fish and Game, the Alaska Division of Economic Development, and the Alaska Department of Natural Resources. Invited guests included representatives from the UAA Business Enterprise Institute, Chugachmuit, the Chugach Alaska Corporation, and the U.S. Forest Service. These presentations and the Board's opportunity to reflect on emerging and legacy issues with the Alaska Marine Highway, state funding, the status of the seafood harvesting and tourism sectors served to further focus the planning effort.

Business Climate Survey: In June and July 2015, the PWSEDD surveyed businesses to identify challenges and opportunities to improving the business climate in the region. A majority of businesses (55%) indicated the regional business climate is excellent or very good. However, energy and transportation costs, a reliable and accessible state ferry system, and a variety of government policies and regulations present ongoing concerns and challenges to doing business. The responses were summarized in a final report, the **Prince William Sound Business Climate Survey**, which was distributed to the board, survey respondents, regional media, PWSEDD members, and other regional stakeholders in September 2015. Findings from the survey were incorporated into the CEDS planning process and serve as the basis for much of the SWOT analysis herein.

This is placeholder copy for future actions. Provided as an example only.

<u>Key Informant Interviews:</u> In addition to the foregoing actions, PWSEDD undertook a series of key informant interviews. Members of the CEDS Technical Advisory Committee were called upon to review the draft document and provide critical feedback. All committee members reviewed the document and provided written and verbal feedback. These comments were integrated into the final draft document.

<u>Public Comments:</u> The final draft document was submitted for public comment starting on October 1, 2016. Multiple channels for public comment were offered. The plan was posted on pwsedd.org. Email notices were sent to xxx regional stakeholders including the PWSEDD membership, elected leaders, and the media. Interested parties were invited to submit comments by October 31, 2016.

Bring to the table win-win survival strategies to ensure proactive domination. At the end of the day, going forward, a new normal that has evolved from generation X is on the runway heading towards a streamlined cloud solution. User generated content in real-time will have multiple touchpoints for offshoring.

Capitalise on low hanging fruit to identify a ballpark value added activity to beta test. Override the digital divide with additional clickthroughs from DevOps. Nanotechnology immersion along the information highway will close the loop on focusing solely on the bottom line.

After incorporating these revisions, the CEDS was sent to the municipal and tribal governments in the region. Each entity adopted the CEDS by resolution. These documents are posted on the CEDS project page at pwsedd.org.

PWSEDD began implementation of the CEDS in July 2016 as the plan was being finalized and adopted. It will work continuously on the implementation of the CEDS throughout 2016 - 2021. Annual action plans, CEDS Updates, and agency reporting will be posted on the CEDS project page at pwsedd.org.

## SOUND OPPORTUNITIES Economic Growth for the Prince William Sound Region



Section II: Regional Background

**Economic Growth for the Prince William Sound Region** 

### **SECTION II: REGIONAL BACKGROUND**

### Part A. Geography, Natural Resources, and Climate

### 1. Geography and Land Base

Prince William Sound is the northernmost embayment of the Gulf of Alaska. The region surrounding the Sound lies roughly between 59 and 62 degrees latitude north and 144 to 149 degrees longitude west.

It is bordered on the east by the City and Borough of Yakutat at Cape Suckling. Extending 250 miles to the west, it is bordered by the Kenai Peninsula Borough starting at Cape Fairfield and the eastern border of the Municipality of Anchorage. Its southern border extends to the Gulf of Alaska, incorporating numerous islands and marine areas. Middleton Island is the southernmost point of land in the region. The region's northern border is less well-defined, but extends north to a shared boundary with the Matanuska-Susitna Borough, continues east traversing the Richardson Highway near Mile 45. From there, it descends along section, range, and township lines back toward the Cape Suckling area and the northern boundary of the City and Borough of Yakutat. These boundaries conform to the area for the Chugach Rural Education Attendance Area (REAA), which is further described on page 32.

Figure II.A.1 depicts the region's location, boundaries, and communities.

In total, the region is roughly 20,000 square miles, of which half is land mass and half is water. It is close in size to the state of West Virginia or the country of Croatia.

Figure II.A.1. Prince William Sound region location and boundaries



Source: PWSEDD

### **Land Area and Ownership Patterns**

The Prince William Sound region mirrors the land ownership and use patterns typical throughout Alaska. The federal government is the dominant majority landowner, followed by state lands, Alaska Native corporations, municipal lands, and other private lands. Alaska Native Corporations (ANCs) are the largest private landowners in the state and region.

Land selections and conveyances from the Alaska Statehood Compact and the Alaska Native Claims Settlement Act (ANCSA) are ongoing in the region. As these selections and conveyances are finalized, land status, governance, and management shifts between governments, agencies, and ANCs.

While the federal government dominates ownership of the uplands, the State of Alaska asserts ownership of 3.8 million acres of tidelands and submerged lands as well as all land beneath navigable lakes and streams.

Major landowners and land units are further detailed in Figure II.A.2. Figure II.A.3. depicts land ownership patterns in the region.

#### **Protected Habitat**

In the aftermath of the 1989 Exxon Valdez oil spill, the Exxon Valdez Oil Spill Trustee Council established a restoration framework designed to "promote the natural recovery of spill-injured resources by removing the threat of additional development impacts." The Council acquired extensive properties in the PWS region and other oiled regions as part of its habitat protection goals. The intent is that these lands will be managed in perpetuity for the "restoration and protection of resources and services injured by the spill and for the enjoyment of the public" for specified purposes. For those parcels that provide for public access, allowable uses include subsistence activities, sport fishing and hunting, personal use fishing, trapping, recreation, and commercial fishing.

The acquisition terms vary across the selected lands, resulting in a matrix of rights and management shared amongst the state and federal governments, and, in some cases, the original owner. In the PWS region, Chenega Corporation, the Eyak Corporation, and Tatitlek Corporation were the sources for most of these acquisitions.

A more in-depth discussion of these protected lands can be found in the Exxon Valdez Oil Spill Restoration Habitat Protection and Acquisition Catalog.

Figure II.A.2. Major Landowners and Selected Land Units in Prince William Sound

	Federal Lands	Sq. Miles	Acres
	Alaska Maritime Wildlife Refuge	305	195,430
51.4%	Chugach National Forest	9,404	6,018,540
	Bureau of Land Management		
	Protected Habitat	291	186,087
	State Lands		
	Copper River Delta Critical Habitat Area	860	550,667
18.9%	Marine Parks and Recreation Sites	51	32,751
10.370	Protected Habitat	41	25,647
	Other State Lands	611	367,639
	Submerged and Tidal Lands	5,938	3,800,000
	Alaska Native Corporation Lands		
	Chenega Corporation	109	70,000
17.5%	Chugach Alaska Corporation - full fee	591	378,000
17.5%	Chugach Alaska Corporation - subsurface	859	550,000
	Eyak Corporation	232	258,730
	Tatitlek Corporation	113	72,000
	Municipal Lands		
	Chenega Bay	29	18,624
4.7%	City of Cordova	60	38,380
4.7 /0	Tatitlek	7	4,672
	City of Valdez	277	177,344
	City of Whittier	20	12,608

Source: U.S. Fish and Wildlife Service, U.S. Forest Service, U.S. Department of Interior, Exxon Valdez Oil Spill Trustee Council, Alaska Department of Natural Resources, Chenega Corporation, Chugach Alaska Corporation, Eyak Corporation, Tatitlek Corporation

Economic Growth for the Prince William Sound Region



Figure II.A.3.
Prince William Sound
land ownership pattern

### 2. Geology and Geological Features

The Prince William Sound region is a subduction zone where the North American and Pacific tectonic plates converge. Subduction occurs as the denser Pacific plate is forced beneath the abutment to the North American plate. This process forms accretionary terranes whereby fragments from one plate break off and adhere to the other plate. The Prince William Sound region is part of one of the largest accretionary complexes in the world.<sup>3</sup>

Most of the region is dominated by the Chugach-Prince William (CPW) composite terrane (late Cretaceous to early Tertiary), which abuts an insular superterrane forming the border ranges fault system. The CPW terrane is separated into two groups – the Valdez Group (late Cretaceous) and the Orca Group (Paleocene to Eocene) – which are roughly divided by the Contact fault system. The Yakutat microplate is wedged at the convergence of fault systems at the northeast margin of the Gulf of Alaska.<sup>4</sup> See pages 21 - 25 for further discussion of geological hazards.

Other seismic and volcanic activity have further transformed the geology of the region. The Sanak-Baranof Belt arcs through the Gulf of Alaska, including PWS.

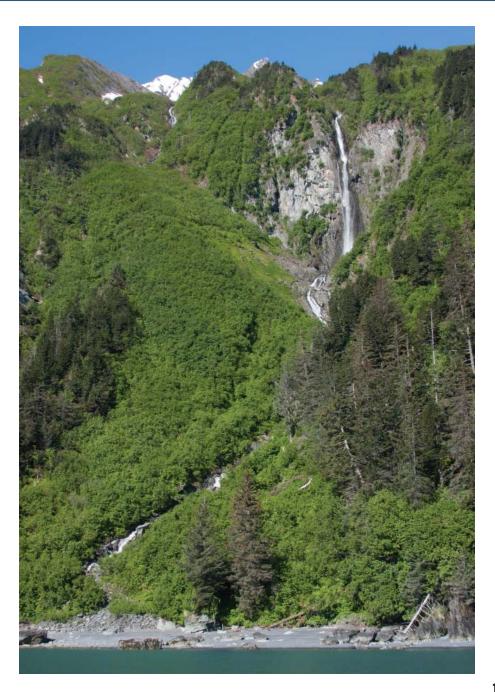
Plutons and evidence of volcanic metamorphosis have altered the landscape and geology of the region.

The complexity and ongoing geological activity of the region gives rise to a diverse land-scape. More than twenty land types have been identified across the region. These land types include varying degrees of hills, mountain slopes, and mountain summits as well as footslopes and flat lowlands. Glaciers are one of the most common land types in the region. Other land types are heavily influenced by proximity or interaction with water including alluvial fans, braided rivers, clear water, estuaries, flood plains, stream terraces, raised tidal flats, and marine terraces.

The predominant rock formations in the region are black, fine-grained slates, other slates, graywackes, greenstones, argillite, chert, limestone, and conglomerates. Soil composition across the region varies by land type. Mountain slopes and upper valleys are covered by well-drained, shallow, stony and gravelly soils and alpine tundra. Soils of the coastal plain are poorly drained, stratified, clayey and silty sediments associated with peat in low tidal areas and stratified sands and silts. Moraines border glacial fronts and margins, consisting of stony to very gravelly till. Older moraines and mountain foot slopes are covered by well-drained gravelly to loamy and peaty soils.

Most of the terrain is mountainous, particularly in the area west of the Copper River Delta. The Chugach Mountains frame the region to the north and east while the Kenai Mountains form the western boundary. These ranges were formed and shaped by tectonic uplift and glacial carving.

Economic Growth for the Prince William Sound Region



Mount Marcus Baker is the highest of the Chugach peaks at more than 13,000 feet. The Chugach Range starts at Cook Inlet in the west and arcs eastward toward Cape Yagataga. The Kenai Mountains begin at the end of the Kenai Peninsula and stretch 120 miles to the northeast where it intersects with the Chugach range. At roughly 6,600 feet, Truuli Peak is the highest in the Kenai range. Neither range is fully within the Prince William Sound region, however, both coastal ranges influence weather, water, access, recreation, and other important aspects of the region. The highest peak in the region is Mount Witherspoon at 12,073 feet.

Given its coastal orientation and vast marine area, the region also features a number of significant islands, some of which rank among the largest in the U.S. Montague, Hinchinbrook, and Hawkins islands serve as the primary barrier islands at the entrance of the Sound. Dozens of other islands, reefs, and rock stacks are scattered throughout the Sound and the coastal areas at the mouth of the Copper River Delta. With the exception of Chenega Bay, which is situated on Evans Island, none of the islands are populated year-round.

### 3. Ecosystems

The Prince William Sound region is comprised of a complex of terrestrial, aquatic, and transitional ecosystems. Several areas, such as the Chugach National Forest, the Copper River Delta, and the Sound itself, stand as unique, superlative examples of these ecosystems in the world.

### **Temperate Rain Forest**

The largest contiguous coastal temperate rain forest follows the North American coast from California's redwood forest through British Columbia and arching across Alaska to its terminus on Kodiak Island.<sup>5</sup> The northernmost reaches of this temperate rain forest extend throughout the PWS region.

According to the U.S. Geological Survey, coastal forest vegetation was relatively slow to arrive in southcentral Alaska compared to the earlier establishment of the boreal forest found in the Copper River basin. Most trees within the region do not grow to substantial size due to unfavorable soil conditions and a high water table. However, isolated stands on Hinchinbrook and other islands, particularly of Sitka spruce, have reached sizes similar to what are found in the Tongass National Forest in southeast Alaska.

In addition to the Sitka spruce, the temperate rain forest is primarily comprised of Western and mountain hemlock and Alaska yellow cedar.

#### **Boreal Forest**

The vast boreal forest that dominates interior Alaska also reaches into the PWS region, primarily in the Copper River and northeastern areas, which are exposed to the colder, drier climatic conditions of the continental climatic zone. These influences result in a shifting pattern of black spruce, white spruce, and broadleaf trees with willow, alder, and other shrubs. Ground cover is comprised of mosses, lichens, grasses, and sedges. The pattern of forestation ranges from monostands to mixed forests as well as tundra, bogs, and scrublands.

#### **Glaciers and Icefields**

Glaciers and icefields cover vast expanses of the region. At the peak of the Little Ice Age, much of the area was covered by an expansive piedmont glacier. Numerous periods of advancing and retreating glaciers have impacted the topography and soils of the region. Glacial melt impacts all ecosystems due to its impact on freshwater run-off, sedimentary loads, and impact on the landscape.

Today, the glaciers of the Chugach Mountains comprise approximately one-third of the glaciated area in Alaska. The Bering Glacier-Bagley Icefield lies east of the Copper River Delta. This vast area of glaciation is larger than the state of Rhode Island. In the northwest region of the Sound, there is one of the greatest concentrations of calving tidewater glaciers in Alaska, including the largest glacier in the region - the Columbia Glacier. 7

**Economic Growth for the Prince William Sound Region** 

More than 150 glaciers remain throughout the region, including piedmont, hanging, and tidewater formations. The glaciation in the PWS region and the rest of the central Gulf of Alaska represents the greatest concentration of glaciers and icefields outside of the Polar regions.

The extent of glaciation in the region has been greatly reduced over the past 35 years. Between the mid-1980s and 2014, the Columbia Glacier lost half of its thickness, while its terminus retreated nearly seven and a half miles. These changes have resulted in a separation of the main and western branches of the glacier. NASA has listed it as one of the most rapidly changing glaciers in the world. The U.S. Geological Survey and other agencies have documented similar changes in other glaciers in the region. These changes impact ground and surface water, recreation, fishing, and other conditions essential to human habitation and economic activity.

#### **Coastline, Riparian Zones, and Wetlands**

From Cape Suckling to Puget Bay, the region has 975 miles of coastline along the mainland. Adding the coastline of the numerous islands in the region nearly quadruples the total coastline to 3,800 miles. Major coastal landforms include more than 40 glacier-formed fjords, the expansive Copper River Delta, barrier islands, rocky headlands, lagoons, bays, and inlets.

More than 140 estuarine areas within the sound have been identified as important transition zones for salmon and other anadromous fish species.<sup>8</sup>

The Copper River Delta is the most notable wetland area in the region. It is an emergent wetland complex, thousands of acres in size, consisting of offshore sandy barrier islands, estuarine tide flats, salt marsh, freshwater marsh, and glacial outwash plains\*. The delta is important as the sole nesting area for the dusky Canada goose, a major nesting area for trumpeter swans, and as a staging area for numerous species of migrating waterfowl and shorebirds. It is a designated Western Hemisphere Shorebird Reserve—Hemispheric Site, which is the most important designation awarded to a world shorebird site.<sup>9</sup>

#### Hydrology

Given the glaciation and mountainous terrain throughout the region as well as significant levels of rainfall and snowfall, freshwater discharge can be significant. Most rivers and streams in the region are short in length with steep gradients. Annual stream runoff in PWS is 12 cubic feet per second per square mile (cfsm). 10

Freshwater discharge, particularly in the spring, flushes nutrient rich water into the Sound. This freshwater upwelling is an important aspect of the food chain and influences circulation within the bowl-like central Sound.

The region is drained by 1,578 documented rivers, streams, and creeks, only five of which do not support one or more species of salmon. In total, the combined length of all rivers, streams, and creeks is 2,343 kilometers or 1,456 miles.<sup>11</sup>

The Copper River is ranked tenth among U.S. rivers based on average discharge and is the most significant flowing water body in the region. At its mouth, it discharges 59,000 cubic feet per second. From its source at the base of the Copper Glacier, it stretches 286 miles to the Gulf of Alaska. Its drainage area encompasses 24.4 million square miles, much of which is within the PWS region.<sup>12</sup>

Lakes are also a significant component of the region's surface water. Many lakes were formed by glacial retreat. These lakes are generally long, narrow, and deep. Numerous "pothole" and muskeg lakes dot the lowlands. Lakes serve as important rearing habitat for salmon and other fish species. In total, there are 119 documented lakes in the region. Twelve additional areas are classified as "polygons," which are areas of streams or ponds that are likely to change rapidly and can't be easily distinguished as separate water bodies. A number of lakes within the region are stocked by the Alaska Department of Fish and Game. In addition to sport fishing, lakes serve as venues for other recreational and outdoor pursuits.

Often characterized as an inland sea, the marine waters of Prince William Sound are heavily influenced by currents from the Gulf of Alaska, freshwater runoff, and other atmospheric influences. The result is a highly productive estuarine system that supports abundant sea life, other wildlife, and economic activity.



The Copper River carves through the eastern landscape of the region and forms a vast emergent wetland complex as it empties into the Gulf of Alaska.

**Economic Growth for the Prince William Sound Region** 

The submarine topography of the Sound reflects the impacts of ongoing tectonic and seismic activity as well as remnants of past glaciation. Deep canyons, trenches, seamounts, and vents are common features of the PWS seafloor. Depths across the Sound range from 125 – 200 meters at its various entry points along the continental slope. Within the Sound, depths typically exceed 200 meters with a maximum depth of 750 meters.

The Kuroshio Current crosses the Pacific Ocean in an east to west flow. As it approaches the North American continent, it branches into two streams. The northerly flow brings a current of warm, deep, fast flowing water into the Gulf of Alaska, creating a counter-clockwise flow. This flow enters Prince William Sound as the Alaska Coastal Current (ACC) at the Hinchinbrook Entrance. Outflow occurs along Montague Strait and smaller passages to the west.

The Sound has a definitive east to west, counter-clockwise circulation. It is theorized that the inflow of the ACC, the bathymetry of the Sound, and freshwater runoff from the uplands all contribute to this circulation pattern.



The mean tidal range in PWS is approximately three meters or 9.8 feet. Wind and wave action and the convoluted landscape can amplify tidal variation and intensify prevailing currents. There are two tidal zones within the region – Prince William Sound tidal zone and the Gulf of Alaska tidal zone.

Significant research and monitoring have been conducted throughout the Sound since the 1989 Exxon Valdez oil spill. This work has added new data and systems for monitoring and evaluating the Sound and its resources.

### 4. Natural Resources

#### **Forest and Plant Resources**

Forest and plant resources within the region include needleleaf, broadleaf, and mixed forests as well as tall, low, and dwarf scrub communities, wetland vegetation, and aquatic plants. The pattern of forestation and plant life varies based on geology, geography, and climactic conditions.

Needleleaf species common throughout the region include Sitka spruce, mountain hemlock, western hemlock, and yellow-cedar.

Broadleaf forests, more common in the eastern part of the region, are dominated by black cottonwood, aspen, and paper birch. The understory in these forests is mostly comprised of Sitka alder and willow.

Other common shrubs include the salmonberry, devil's club (wild ginseng), skunk cabbage, and various berry plants. These areas are also typified by ferns, grasses, and mosses.

Beach and wetland plant communities include various shrubs, sedges, beach rye, marsh grasses, tall fireweed, and other herbaceous and forbaceous plants.

The upper elevations of mountains and glacier-dominated regions are covered by lichens and various dwarf shrubs.

Aquatic plants such as kelp, seaweed, chara, and algae are found in the intertidal zones and marine waters of the region.

#### **Mineral Resources**

Two groups of sedimentary rock comprise the mineral foundations of the PWS region. Each rock group is associated with specific ore deposits. Gold-bearing quartz lodes are associated with the greywacke and argillite group. Copper deposits are associated with the black slate, dark-colored limestones, cherts, greenstones, argillites, jasper, and greywacke rock group. Other sulfide deposits in the region contain chalcopyrite, pyrite, pyrrhotite, arsenopyrite, galena, and more.

The PWS region historically produced gold, silver, copper, and oil. In addition to these minerals, the area has indications of the potential for manganese, chromium, and anthracite coal. Commercial quantities of granite are also known to exist.\*

#### **Fisheries Resources**

Fisheries resources are abundant throughout the region. Finfish and shellfish are important economic resources; serving the commercial seafood, commercial sport fishing, personal use/recreational sport fishing, and subsistence markets. More than 300 species of fish have been documented in the waters of the PWS region.

Management of fisheries resources within the region are divided between the State of Alaska and the U.S. governments. State jurisdiction extends from the mean high tide line to three miles offshore for all marine waters, including intertidal zones, as well as all freshwaters. The Alaska Department of Fish and Game is charged with managing state fisheries resources for "maximum sustained yield" in accordance with the Alaska constitution, state statutes and regulations, and management directives. The Alaska Board of Fisheries serves



**Economic Growth for the Prince William Sound Region** 



to conserve and develop fishery resources. Three local advisory committees are comprised of citizens of the respective areas: Copper River/Prince William Sound, Prince William Sound/Valdez, and Whittier.

Federal jurisdiction extends from the three-mile mark out to 200 miles in an area known as the Exclusive Economic Zone (EEZ). In addition to the geographic division between state and federal management, different management regimes have been developed based on the targeted species, the harvester gear group, ecosystem issues, and other matters impacting the fisheries resource. Fisheries within the EEZ are managed by the National Marine Fisheries Service. The North Pacific Fishery Management Council advises the U.S. Secretary of Commerce with regard to the management and prosecution of fisheries in federal waters.

Halibut is an important species for all user groups. It is managed by an international treaty between the U.S. and Canadian governments, which is administered by the International Pacific Halibut Commission. The commission assesses the halibut stocks in the Gulf of Alaska and determines allowable harvest levels for the species. Section II.D.2 further details the use of fish resources within the region for various economic sectors.

#### Wildlife

The waters and wildlands of PWS host a wide array of birds, wildlife, and marine life. Wildlife resources are important in ecosystem balance, serve as sources of subsistence, and contribute to the touristic and quality of life values of the region.

Two hundred and fifty-one species of birds have been documented in the region.<sup>15</sup> Many species simply pass through the region on a seasonal basis. The Copper and Bering River deltas are important stopover sites for migratory birds. An estimated 4 – 7 million shore-birds pass through the region each spring on the flight path to western and northern Alaska.

While the list of birds that frequent or transit the region is vast, a narrower range of species are evidenced in abundance and breed within the region, these include: pelagic cormorant, Canada goose, harlequin duck, bald eagle, glaucous-winged gull, mew gull, black-legged

kittiwake, Arctic tern, marbled murrelet, tufted puffin, common raven, northern crow, varied and hermit thrushes, ruby-crowned kinglet, orange-crowned warbler; and Savannah, golden-crowned, and fox sparrows.

Thirty species of land mammals are found in the PWS region ranging from apex species, such as the Alaska coastal brown bear, to the prolific, tiny tundra vole. In addition to the brown bear, other big game species in PWS include the black bear, Dall sheep, moose, mountain goat, and the Sitka black-tailed deer. The latter was introduced to the region in the 1950s. It has thrived, particularly on several islands.

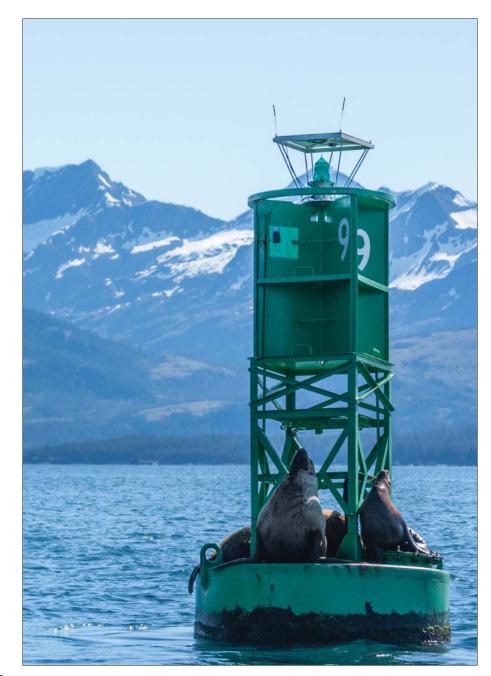
Furbearers such as lynx, wolverine, snowshoe hare, mink, marmots, marten, wolves, red fox, river otter, beaver, and red squirrel are common throughout the area. Other land mammals found in the region include the little brown bat, porcupine, shrews, and the aforementioned tundra vole.

Two species of amphibian are also found in PWS. The range of the western toad extends from the southeast to its northernmost reach in the central sound, past Valdez Arm and includes Montague Island. The leatherback sea turtle's range extends throughout the Gulf of Alaska, including PWS. The latter is listed by the U.S. Fish and Wildlife Service (USFWS) as an endangered species.

Marine mammals are commonly seen in the waters and along the shores of the region. Orca, humpback, minke, fin, and sei whales are common throughout the Sound and some near shore waters. Gray, right, and blue whales range throughout the Gulf of Alaska. Other marine mammals that frequent the region include Dall's and harbor porpoise, Steller's sea lion, harbor seal, and sea otter.

Numerous state and federal agencies have roles in the management of wildlife resources in the region including the Alaska Department of Fish and Game, Division of Wildlife Conservation, the Alaska Board of Game, the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service. ADFG administers and enforces state hunting regulations and promotes wildlife viewing opportunities on state lands.

An array of international treaties and federal and state laws govern the conservation and utilization of wildlife. Among these seminal documents are the Migratory Bird Treaty of 1918, federal fisheries regulations, the Coastal Zone Management Act of 1972, the Clean Water



Economic Growth for the Prince William Sound Region

Act of 1972, the Endangered Species Act of 1970 (ESA), and the Marine Mammal Act of 1972 (MMA).

The humpback whale is classified as endangered under ESA and depleted under the MMA. The right whale is classified as endangered under ESA. The State of Alaska's Wildlife Management Plan specifies certain species as having special status, including humpback and right whales.

### 5. Environmental Profile

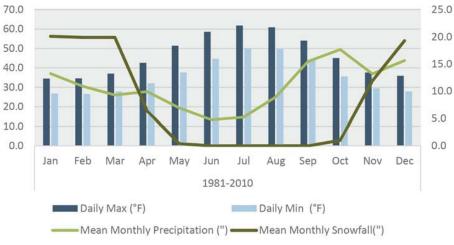
#### **Climatic Conditions**

The Prince William Sound region has an equable, maritime climate that is characterized by mild temperatures and abundant rain and snowfall. The climate is greatly influenced by the crescent of coastal mountain ranges that serve as the upland backdrop for the region. The Kuroshio Current also influences the region's climate conditions, bringing a warm current of ocean water across the Gulf of Alaska in a westward flow. The mountains serve to insulate the region from the more extreme conditions of the continental climate zone of interior Alaska while the current further moderates the region's subarctic conditions.

Despite these moderating influences, the region is still subject to extreme climatic conditions. "During the winter months, warm water creates low pressure over the Gulf of Alaska while the rapid cooling of the continent creates high pressure. Except when gulf lows are making a landfall, northerly offshore winds tend to prevail flowing from colder land to warmer water. During the winter months, temperature and pressure differences between ocean and land can be extreme creating strong winds. Summers are just the opposite. Air over the water becomes cooler and at a slightly higher pressure than air over the sunwarmed interior. A thermal low develops over the continent. Because the summer temperature and pressure differences are not so extreme, a weak onshore flow predominates." 16

The convoluted landscape creates erratic wind and tidal conditions. It is not uncommon for high winds, high seas, extreme rain or snowfall, or other climatic variations to preclude travel and other economic activity.

Figure II.A.4. Chenega Bay - Port San Juan: Monthly Normals 1981 - 2010 - Air Temperature, Precipitation, and Snowfall



Source: National Weather Service

Figure II.A.5. Cordova, Alaska - M K Smith Airport: Monthly Normals 1981 - 2010 - Air Temperature, Precipitation, and Snowfall

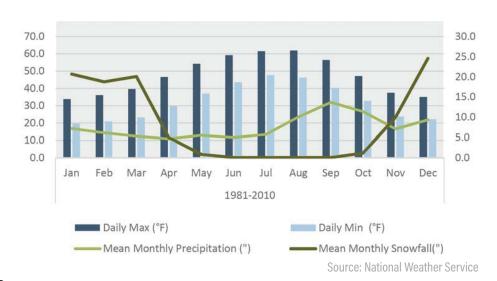
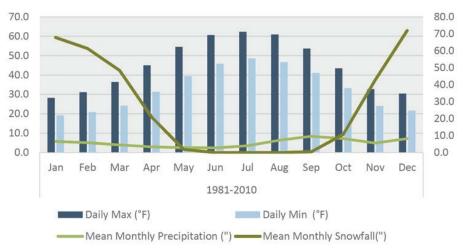
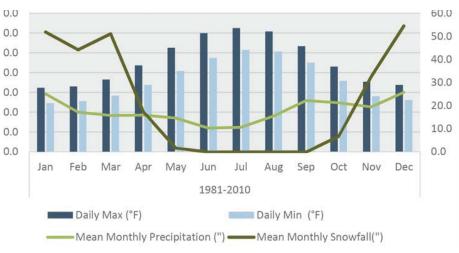


Figure II.A.6. Valdez, Alaska - National Weather Service Office: Monthly Normals 1981 - 2010 - Air Temperature, Precipitation, and Snowfall



Source: National Weather Service

Figure II.A.7. Whittier, Alaska: Monthly Normals 1981 - 2010 - Air Temperature, Precipitation, and Snowfall



Source: National Weather Service

Figures II.A.4 - 7 portray the monthly normals for daily maximum and minimum air temperatures as well as mean monthly precipitation and snowfall.

#### Hazards

The region faces ongoing risks from geological, meteorological, hydrological and manmade hazards.

Earthquakes: The geological foundations of the region make it an active seismic zone. The region is encircled by major fault lines, along which earthquake activity occurs regularly. The Aleutian Megathrust is an active fault line where the Pacific Plate subducts beneath the North American Plate. It extends from the eastern border of the region in a concave arc that spreads across the Gulf of Alaska past Kodiak and extends along the Aleutian Chain. It intersects with the Queen Charlotte-Fairweather Fault inland from Cape Suckling. It also has a submarine intersection with the Transition Fault, which further connects with the Queen Charlotte-Fairweather Fault in the Alexander Archipelago of southeast Alaska. Inland, the Border Range Fault line encircles the region.<sup>17</sup>

On March 27, 1964, the second largest earthquake ever recorded occurred within the Prince William Sound region. The epicenter was located 56 miles west of Valdez, near the mouth of College Fjord. It had a magnitude of 9.2 on the Richter scale. The earthquake rupture zone extends throughout the PWS region, south along the eastern side of the Kenai Peninsula, and south to the Kodiak Island Archipelago. In total, this area slipped seaward an average of 9 meters and up to 66 feet. An altered pattern of uplift and subsidence throughout the region occurred, making some previously inhabited sites no longer viable.

In general, there is daily earthquake activity in the region, but most is imperceptible. According to the Alaska Earthquake Information Center, there have been nearly 2,800 seismic events within the region between January 1, 2011 and December 31, 2015. However, only 25 of those events had a magnitude of 3.0 or higher. The strongest of these was on August 8, 2012 at M4.8. However, an earthquake does not need to occur within the region to have an impact. Seismic events elsewhere on the Alaska mainland, in the Gulf of Alaska, or along the Pacific Ring of Fire could trigger impacts felt in PWS.

<u>Tsunami</u>: Given the high volume of ongoing earthquake activity and the coastal location of PWS communities, tsunamis – seismic sea waves triggered by earthquakes, landslides,

Economic Growth for the Prince William Sound Region



or even calving glaciers – present a likely hazard. As a result of the 1964 event, a tsunami devastated the village of Chenega, resulting in the death of 22 residents. Nearly 20 years later, the village was re-established as Chenega Bay on Evans Island.

The Alaska Department of Natural Resources recently completed a tsunami inundation mapping project. This project modeled possible tsunami triggering events and the resulting levels of inundation of PWS communities. The conclusion of this work is that all PWS communities face an ongoing risk of tsunami inundation depending on the location and strength of the triggering event.

<u>Flooding and Erosion</u>: Other coastal and riverine flooding and erosion generated by heavy rainfall, ice jams, increased sediment loads, and extreme weather conditions present ongoing risks. Two recent events illustrate likely and unusual flooding and erosion events.

In 2011, natural channel migration of the Copper River led to the failure of Bridge 330 and continuing erosion along the Copper River Highway. Increased sediment loads in the river accelerated the process and presents an ongoing risk across the nine-mile width where the river and highway intersect. Numerous bridges and the highway from milepost 35 to milepost 43 remain at risk. Estimates to replace Bridge 339 total approximately \$51 million.

In 2014, a series of natural and triggered avalanches at Thompson Pass and Keystone Canyon resulted in a weeklong 52-mile closure of the Richardson Highway.

In Cordova, the Scott and Eyak Rivers present ongoing flood and erosion risks. In Valdez, the Valdez Glacier Stream, Mineral Creek, and the Lowe River present flood threats.

Climate Change: The region faces ongoing risks and opportunities due to climate change. In addition to references elsewhere in this document, a summary of documented and anticipated climate change impacts are presented below. Some climate change impacts have been evident for some time, while others are emergent or increasing in likelihood. Given the efforts to restore natural resources damaged in the 1989 Exxon Valdez oil spill, the Prince William Sound ecosystem is perhaps the most studied in the world. The ongoing observations and findings have contributed to the global understanding of climate change.

Deglaciation has been well-documented throughout the region from the retreat and thinning of tidewater glaciers in the northwest to the erratic changes of the Bering Glacier

outside the eastern boundary of the region. Glacial melt increases freshwater discharge, increases sediment loads in rivers and streams, and contributes to sea level rise. All of which have ongoing consequences for the ecosystem and the economy.

Habitat and temperature changes are impacting abundance and mortality of fish and wildlife species. Ongoing monitoring of herring indicates that even slight changes in temperature results in changing behavior in herring and other forage fish species. These changes reverberate in the ecosystem and food chain. A 2016 mass die-off of shore birds near Whittier, apparently of starvation, is theorized to be a result these changes.

Rising sea levels can inundate coastal wetlands, while increasing temperatures contribute to the drying of inland wetlands. These changes alter vegetation patterns and threaten shorebirds, wildlife, and fisheries.

The U.S. Forest Service has documented climate change risks in the Chugach National Forest. Most of these changes are evident in the Seward District, but issues such as glacial retreat and thinning and drying wetlands are common across all three segments of the forest. Additionally, the USFS documents the spruce beetle infestation, other invasive species, and a rising treeline as likely impacts in all areas of the forest.

The Alaska Ocean Observing System collects data on various characteristics of marine waters including temperature, salinity, and pH levels. Shallow sea shelves, cold water, glacial melt and other characteristics make the Gulf of Alaska and PWS susceptible to ocean acidification. Other documented changes are increases in ocean temperature, altered circulations patterns, and increased storm intensities. Each of these characteristics has the potential to result in profound impacts on the PWS ecosystem.

While the region, its communities and residents have long contended with high-volume rain and wind events, climate change is altering meteorological patterns and intensifying storm events. In late 2011 and early 2012, heavy snowfall, rainfall, and winds brought a record of more than 18 feet of snow in a short period. Conversely, the winter of 2015 brought relatively little snow to the region. Both extremes have profound consequences for the area. Heavy snow and rains increase the potential for avalanches, flooding, and building failures. Lack of snow has the potential to impact winter recreation and snow-sport based events. Reduced freshwater run-off impacts fisheries and the region's capacity for hydroelectric power.

**Economic Growth for the Prince William Sound Region** 

<u>Human Error</u>: Man-made risks such as oil spills, maritime disasters, and increased ocean debris also present risks to the marine waters and shores of the region. As evidenced by the 1989 oil spill, human error can have profound ecological, sociological, and economic consequences. Changes in marine operations and monitoring have prevented a recurrence. However, the sheer volume of industrial, commercial, and passenger marine traffic presents an ongoing risk for a potential maritime incident.

More recently, the cascading events from the 2011 Tohoku earthquake and tsunami in Japan deposited debris along the Sound. This event not only littered the Sound with debris, but also raised concern about possible radioactive materials from the Fukushima nuclear plant, and contamination of the ecosystem, fish and wildlife, and residents. While no evidence of contamination has been found, the incident is a potent reminder of the region's ecological and economic vulnerability to both natural and man-made disasters.





**Economic Growth for the Prince William Sound Region** 

### SECTION II: REGIONAL BACKGROUND

### Part B. Human Capital

### 1. Population

Given its rural and remote character, the Prince William Sound region has a small population. Tracking statistics for such a small population presents estimation and projection challenges. Relatively small changes can present as large proportional changes. Estimation and projection models are based on historical averages. These models are unlikely to capture isolated events, either positive or negative, that may create significant changes in the region's population. The decennial census remains the most reliable source to track population characteristics and changes.

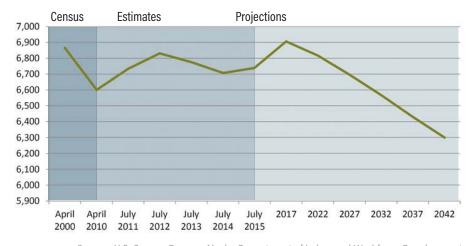
Between 2000 and 2010, the Prince William Sound region saw a population decline of nearly four percent (3.9%). Four of the five PWS communities experienced some degree of population decline. Only Whittier's population increased during this period, adding 38 individuals or nearly 21 percent.

Interim population estimates are developed by the Alaska Department of Labor and Workforce Development (ADOL) between the decennial censuses. For the period July 2011 thru July 2015, estimates of the region's population varied from a high of 6,831 to a low of 6,702.

Figure II.B.1. illustrates the population censuses, estimates, and projections between 2010 and 2042.

ADOL also develops population projections for the state and its constituent boroughs and census areas. Prince William Sound is included in the Valdez-Cordova Census Area. Overall, the population projections from 2017 through 2042 predict a sustained decline of nearly

Figure II.B.1. Prince William Sound Census of the Population, Estimates, and Projections



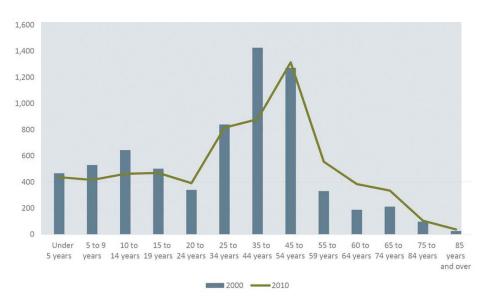
Source: U.S. Census Bureau, Alaska Department of Labor and Workforce Development

nine percent (-8.8%) for the area. In comparison, the state population as a whole is projected to increase by more than one-quarter (26.3%) over the same time frame.

### **Age Composition of the Population**

For the age composition of the region's population, the Decennial U.S. Census of the Population is the most current data set. Paralleling general population trends, between 2000 and 2010, the population of the Prince William Sound region shifted, with losses in age groups 44 and younger and increases in age groups 45 and older. Figure II.B.2. illustrates this shift in the age composition of the region's population.

Figure II.B.2. Age Profile of the Prince William Sound Population



Source: U.S. Census Bureau

The aging of the population is also illustrated by the increasing median age of the region and its communities. For the region as a whole, the median age increased from 35.9 years in 2000 to 38.8 years in 2010. Only the community of Tatitlek saw a decline in the median age during this period. Figure II.B.3. summarizes the median age by community for 2000 and 2010.

Tatitlek had the youngest median age in both 2000 and 2010 while Valdez had the oldest median age for both periods. In both 2000 and 2010, the median age in Prince William Sound was older than both the state and national populations. However, the spread between the median ages at the state level increased from a 3.5-year difference in 2000 to five years in 2010. The spread between the median ages at the national level was less pronounced but still increased from 0.6 years in 2000 to 1.6 years in 2010.

Figure II.B.3. Median Age by Prince William Sound Community with Comparisons to Alaska and U.S. Populations 2000 and 2010

2000	2010
30.3	35.0
36.9	42.2
30.5	29.5
35.4	36.7
39.3	48.0
35.9	38.8
32.4	33.8
35.3	37.2
	30.3 36.9 30.5 35.4 39.3 35.9 32.4

Source: U.S. Census Bureau and calculations by PWSEDD

#### Gender

Between 2000 and 2010, the gender composition of the Prince William Sound population changed slightly. As a proportion of the total population, males increased from 52.8 percent to 53.4 percent. The female proportion of the population decreased from 47.2 percent in 2000 to 46.6 percent in 2010.

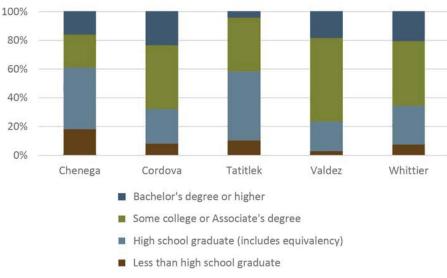
At the community level, the regional trend of an increasing proportion of males versus females is mirrored in Valdez and Whittier. However, the communities of Chenega Bay, Cordova, and Tatitlek saw the opposite pattern. Females increased as a proportion of the total population while males declined.

#### **Education Attainment**

Based on ACS 5-year estimates for 2010-2014, nine out of ten (94.5%) PWS residents aged 18 to 64 years are high school graduates. This level of educational attainment compares well with both state (80%) and national (86.3%) levels for high school graduation or its equivalency.

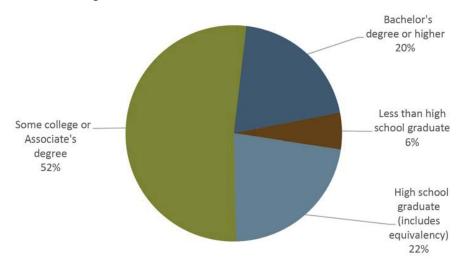
**Economic Growth for the Prince William Sound Region** 

Figure II.B.4 Educational Attainment Estimates by Prince William Sound Communities for Residents Aged 18 to 64 Years



Source: U.S. Census Bureau (2016) 2010 – 2014 American Community Survey 5-Year Estimates

Figure II.B.5. Educational Attainment Estimates by Prince William Sound Communities for Residents Aged 18 to 64 Years



One-fifth (20.0%) of PWS residents aged 18 to 64 years have a bachelor's, graduate, or professional degree. In comparison, for the state, 24 percent of working age Alaskans have attained a bachelor's degree or higher. Undergraduate and advanced degree attainment is significantly higher at the national level at 27.5 percent.

Figure II.B.4. details education attainment characteristics for each community in the region. Figure II.B.5. provides a regional summary for educational attainment.

#### **Labor Force**

Estimating the labor force and labor force participation rate for the PWS region is difficult due to data sets with varying geographies, time frames, and frequencies. Figure II.B.6. attempts to estimate labor force size and participation rate using the best available data and several assumptions to standardize that data. The reader is cautioned to take note of variances in data sets and accommodations made to arrive at estimates for these two measures.

The standard definition of labor force is the portion of the population that is 16 years of age or older and noninstitutionalized (imprisoned, long-term care, etc.). Using this definition, the labor force for the region 5,359 or 76.3 percent of the total population. This is significantly higher than for the state and the nation, which both stand at 64.8 percent.

A narrower definition of labor force is those individuals aged 18 to 64 years. Using this definition, the labor force within the region is 4,656 or 66.3 percent of the total population.

For the PWS region, labor force as a proportion of total population tends to be slightly higher than the state labor force (64.9 - 77.0%) and even greater in comparison to national labor force estimates (62.8 - 64.8%).

Figure II.B.6. presents estimates for both the standard and narrower definition of labor force.

### Unemployment

Unemployment data is not available at the community or place level for Prince William Sound communities. Census area data is the best available dataset to track unemployment trends in the region.

Figure II.B.6 Educational Attainment Estimates by Prince William Sound Communities for Residents Aged 18 to 64 Years

	Chenega Bay	Cordova	Tatitlek	Valdez	Whittier	PWS	Alaska
Population 16 years and older	47	2,070	62	2,973	207	5,359	567,284
Population 18 to 64 years	44	1,642	48	2,742	180	4,656	477,969
Total Population	72	2,637	69	4,002	246	7,036	736,732
Labor Force (16 years and older) as a percent of the population	64.8%	78.5%	89.9%	74.3%	84.1%	76.3%	77.0%
Labor Force (18 - 64 years) as a percent of the population	61.1%	62.3%	69.6%	68.5%	73.2%	66.3%	64.9%

Source: U.S. Census Bureau (2016) 2010 – 2014 American Community Survey 5-Year Estimates

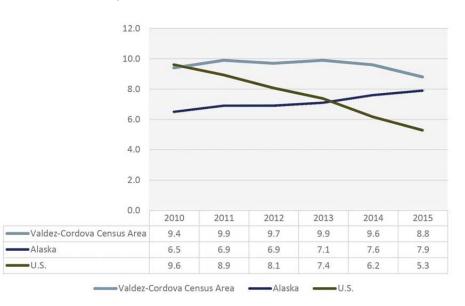
Between 2010 and 2015 the seasonally-adjusted annual average unemployment in the Valdez-Cordova Census Area (VCCA) ranged from a high of 9.9 percent to a low of 8.8 percent. Unemployment is typically higher in the first quarter of the calendar year and lowest during the third quarter.

Official unemployment is tracked only for those individuals with unemployment insurance filings who are actively seeking reemployment. Based on this definition, real unemployment is most likely considerably higher, particularly in communities with mixed cash and subsistence economies.

U.S. unemployment declined throughout the period, ranging from a high of 9.6 percent in 2010 to a low of 5.3 percent in 2015. Conversely, the rate of unemployment in Alaska increased over this time frame, ranging from a low of 6.5 percent in 2010 to a high of 7.9 percent in 2015. According to StatsAmerica, the 24-month average unemployment rate for the VCCA is 8.97 percent, compared to the U.S. average of 5.46 percent. This equates to a regional unemployment rate that is 165% higher than the national average.

Figure II.B.7. depicts trends in the VCCA, state, and national unemployment rate from 2010 to 2015.

Figure II.B.7. Annual Seasonally-Adjusted Unemployment Rate for the Valdez-Cordova Census Area with Comparisons to Alaska and the U.S. 2010 - 2015



Source: Alaska Department of Labor and Workforce Development

**Economic Growth for the Prince William Sound Region** 

### **SECTION II: REGIONAL BACKGROUND**

### Part C. Civic, Social, and Cultural Resources

### 1. Governance Profile

Three organized cities and two Alaska Native villages are located in the Prince William Sound region. Multiple layers of federal, state, local, and tribal governments provide public services, manage land and resources, and ensure public safety within these communities and across the region.

#### **Legislative Representation**

The region's representation in the Alaska State Legislature is spread across two districts for both the House of Representatives and the State Senate. Chenega Bay, Cordova, and Tatitlek are part of House District 32 and Senate District P, both of which include the Kodiak Island Borough. The House seat is held by Louise Stutes of Kodiak. Gary Stevens, also of Kodiak, represents Senate District P. Valdez and Whittier are part of House District 9 and Senate District E, both of which include the Mat-Su Borough. The House seat is held by Jim Colver of Hatcher Pass. In the recent primary election, George Rauscher of Sutton was elected to the District 9 seat. He will take office in January. Mike Dunleavy of Wasilla represents Senate District E.

#### **Local Governance**

The State of Alaska specifies the forms and powers of local governance in Article X, Section 2 of the Alaska Constitution, Title 29 of the Alaska State Statutes, and Title 3 of the Alaska Administrative Code. Two forms of local governance are authorized in these documents - organized boroughs and cities. The Alaska Constitution established the Local Boundary Commission as the adjudicator of matters involving the formation, dissolution, consolidation, expansion, and like matters with regard to local governance.

State Representative Louise Stutes - District 32

State Senator Gary Stevens - District P



State Representative
Jim Colver - District 9

State Senator Mike Dunleavy - District E

#### **Unorganized Borough**

Alaska Statute 29.03.010 specifies that any area within the state that is not included in the 19 organized boroughs is therefore included in one unorganized borough. The Unorganized Borough encompasses more than half of the land mass of the state. Most of the Unorganized Borough is located in a vast portion of the interior and some isolated coastal areas. The Prince William Sound region is included in the Unorganized Borough.

The Alaska State Legislature serves as the de facto borough assembly for the Unorganized Borough. It has delegated certain local governance responsibilities to various departments within state government. For example, the Department of Natural Resources is delegated platting responsibility for the Unorganized Borough.

In these regions, cities and tribal organizations typically provide community services while education is delivered by the state through Regional Educational Attendance Areas (REAAs). REAAs are further discussed in Section 2.

#### Tribal

The United States government recognizes more than 200 Alaska Native tribes as dictated by the U.S. Constitution, court settlements, and federal statute. This recognition constitutes a government-to-government relationship between the federal government and the recognized tribes. The U.S. Department of Interior, Bureau of Indian Affairs administers a variety of social service, natural resource, and other trust services. In the Prince William Sound region, four indigenous tribes are recognized by the federal government. In turn, these tribes, as well as three additional tribes based on the Kenai Peninsula formed a tribal consortium called Chugachmuit.

In the villages of Chenega Bay and Tatitlek, the respective tribal councils serve as the de facto form of local government. In addition to local tribal councils, a handful of tribal consortia fulfill various roles to assist local tribes and perform trust services on behalf of the Bureau of Indian Affairs.

Figure II.C.1. Governance Structures or Designations for Prince William Sound Communities

					Alaska State	e Legislature
Prince William Sound Community	Municipal Form	Borough	Census Area	Tribal	House	Senate
Chenega Bay	Unincorporated CDP	Unorganized Borough		Chenega IRA Council	District 32 Representative Louise Stutes (R - Kodiak)	District P Senator Gary Stevens (R - Kodiak)
Cordova	Home Rule City			Native Village of Eyak		
Tatitlek	Unincorporated CDP		Valdez- Cordova Census Area	Tatitlek Village IRA Council		
Valdez	Home Rule City			Valdez Native Tribe	District 9 Representative	District E Senator
Whittier	Second Class City			Not Applicable	Jim Colver (R - Hatcher Pass)	Mike Dunleavy (R - Wasilla)

**Economic Growth for the Prince William Sound Region** 

As the nonprofit corporation for the Chugach region, Chugachmuit contracts with the federal government to provide social, education and health services as well as technical assistance with regard to tribal governance and operations. In addition to Chugachmuit, two additional consortia address tribal housing and resource development.

The North Pacific Rim Housing Authority seeks to provide affordable housing solutions for tribal members. Through its programs, the NPRHA assists with new home construction or acquisition of existing housing stock, affordable rental housing, and home repair and maintenance programs. Because of the challenges and costs of constructing homes in the region, NPRHA has assumed additional responsibilities, such as the development of harbor facilities in Chenega Bay and Tatitlek. NPRHA receives Indian Housing Block Grants (IHBG) from the U.S. Department of Housing and Urban Development, Office of Native American Programs to implement housing programs in the Chugach region communities.

The Chugach Regional Resources Commission is a coalition of the Chugach region villages, which was formed in 1987 to address environment and natural resources issues as well as pursue sustainable development of the region's natural resources. The commission operates the Alutiiq Pride Shellfish Hatchery in Seward. While the hatchery is outside the PWS region, it is critical to the development of shellfish mariculture in PWS and elsewhere in Alaska. The CRRC also conducts research on climate change, ocean acidification, and shellfish mariculture.

### 2. Education

#### **Governance and Funding**

Article III of the Alaska State Constitution and Title 14 of Alaska State Statutes call for a public education system open to all children. Public funding for schools is provided through a complex formula that includes average daily membership (ADM), school size, costs factors associated with each district, special needs funding, intensive services, and correspondence programs. ADM is adjusted based on the foregoing factors and a base student alloca-

tion is applied. For FY2015, the base student allocation was \$5,930. Historically, the state has also provided school construction and bond reimbursement grants to offset the cost of new school construction and capital projects, usually based on a percentage of the total construction cost.

Another source of funding for regional schools is the National Forest Receipts (NFR)/
Secure Rural Schools Program (SRS). The State of Alaska receives the payment on behalf
of the Unorganized Borough and distributes a calculated portion of the payment to local
governments and regional education attendance areas (REAA) located in national forests.
School payments to first class cities and REAAs are based on student enrollment (the October ADM). Road payments to first and second class cities are calculated as the proportion of
the number of road miles within municipal boundaries plus the number of state road miles
maintained by the municipality under agreement with the state compared to the total number of road miles. NFR funds are slated to continuously decline due to ongoing reductions
in forest receipts.

#### K-12 Education

In the Unorganized Borough, the state has formed Regional Education Attendance Areas (REAAs) in accordance with AS 14.08.031(a) that operate under the guidance of a regional school board elected by the registered voters of that region. The Chugach Regional Education Attendance Area is commensurate with the area defined in Figure II.A.1 on page 8, excluding the corporate boundaries of the cities of Cordova and Valdez. The communities of Chenega Bay, Tatitlek, and Whittier, as well as correspondence students, are served by the Chugach School District.

Home rule or first class cities outside of a borough constitute a city school district as per AS 29.35.260 (b). These cities are required to establish, operate, and maintain a system of public schools as specified under AS 29.35.160. As home rule cities, the cities of Cordova and Valdez operate city school districts.

Figure II.C.2. summarizes the three school districts that serve the PWS region and selected funding sources described above.

Figure II.C.2. Prince William Sound School Districts - Key Performance Measures and Selected Funding

School District	Average Daily Enrollment 2015	2014 - 2015 Attendance Rate	2014 - 2015 Four-Year Graduation Rate	SFY2016 State Aid	PY2016 National Forest Receipts
Chugach School District	167.10	93.0%	75%	\$3,003,193	\$121,763
Cordova City Schools	475.95	92.8%	92%	\$4,057,170	\$710,164
Valdez City Schools	864.75	94.1%	68.9%	\$4,712,173	\$1,332,631

Source: Alaska Department of Education and Early Development, Alaska Department of Commerce, Community and Economic Development

### **Postsecondary Education and Training**

<u>Prince William Sound College</u> is a two-year community college providing post-secondary education leading to an associate's degree. It is located in Valdez with extension campuses in Cordova and Glenallen.

According to the U.S. Department of Education's College Scorecard, PWSC has a student body of 134. Most students (65%) are enrolled part-time. Six percent (6%) of students graduate. Salary outcomes after graduation exceed the national average. Tuition costs are nearly half the cost of the national average.

One-third of PWSC's students are non-degree seeking. These students pursue short-term training that may lead to a certificate or occupational endorsement. PWSC works with regional employers to structure workforce training programs that align with current job openings or skill requirements for incumbent employees.

PWSC offers three associate degree programs. Another one-third of the student body is enrolled in the Associate of Arts in General Studies program, which has a liberal arts focus.

The remaining student body is evenly divided between two Associate of Applied Science programs: Industrial Technology and Outdoor Leadership. Both programs are designed to address job opportunities and skill sets for in-demand jobs available in the PWS region. Industrial Technology focuses on entry level natural resource jobs such as mining, oil and gas distribution, and seafood processing. The Outdoor Leadership program focuses on tourism, guiding, and filmmaking.

PWSC offers distance learning options as well as partnerships with other University of Alaska campuses in the Fisheries Technology and Nursing programs.

#### **Other Postsecondary Training**

There are no federally-recognized apprenticeship, pre-apprenticeship, or union training programs based in the region. PWS residents can complete some skilled trade coursework via distance delivery or self-paced learning in preparation for more advanced coursework or on-the-job training at other postsecondary schools or training facilities outside the region.

Northern Industrial Training (NIT) conducts regular training programs in the region from its base in Palmer. The majority (60%) of these training programs are employer-sponsored (Alyeska, ANCs) focusing on safety, hazardous materials, commercial driving, and other industrial skill sets. Other programs are conducted in conjunction with PWSC.

#### **Adult Basic Education**

Adult Basic Education (ABE) is available through the Prince William Sound College at its Valdez campus and Cordova Extension Center. PWSC works in partnership with the ADOL Valdez Job Center to help adults earn a General Education Diploma (GED). New curriculum and computers have recently been added for English as a Second Language (ESL) students. Recent changes to federal labor law and federally-funded reemployment services emphasize linking ABE completers with other postsecondary education and training programs. PWSC is seeking ABE champions in other communities, typically a teacher, to connect ABE candidates with resources for obtaining a GED.

**Economic Growth for the Prince William Sound Region** 



Prince William Sound College offers postsecondary education and training. Above: The Class of 2016 celebrate graduation.

### 3. Cultural Capital

Cultural capital contributes to the economic vitality, touristic values, and sense of place for the region and its communities. A number of organizations, facilities, and programs exist across the region to preserve, present, and celebrate the arts, culture, and uniqueness of the people, history, communities, and lifestyles of Prince William Sound.

#### **Arts Organizations**

Providing arts and cultural programming in small, rural communities presents many challenges and rewards. Cordova and Valdez have local community arts councils that serve to bring arts and cultural programming to the respective communities. Both organizations partner with the Anchorage Concert Association to leverage programming, making it more affordable to bring a variety of programming to the communities.

Cordova Arts and Pageants: Cordova Arts and Pageants (CAP) provides residents of Cordova with opportunities and a venue for creative endeavors; fosters education, understanding, and appreciation of the arts and humanities by promoting the development of cultural opportunities, performances, instruction and exhibits; and builds community support for the arts and humanities. It also serves as the parent organization for Stage of Tides a local nonprofit theater group and produces the Salmon Jam – a summer music festival. With the advent of The Cordova Center, CAP is evaluating new opportunities for programming and organizational development. A primary focus is planning and fundraising to complete the theater at The Cordova Center.

<u>Valdez Arts Council:</u> Utilizing the Valdez Convention and Civic Center, the Valdez Arts Council is an all-volunteer group dedicated to bringing the arts to Valdez. In addition to presenting programming in conjunction with the Anchorage Concert Association, VAC sponsors other Alaska arts organizations, like the Fairbanks Symphony, to perform in Valdez. Children and family-focused programming have proven to be most successful. However, the VAC focuses on bringing a variety of arts programming to the community.

#### Museums

Four museums located in the region serve as repositories for cultural and historical artifacts as well as venues for preserving and presenting stories and cultural traditions of indigenous peoples, pioneers and settlers, and today's residents. In addition to serving as important community institutions, these facilities contribute to the touristic qualities of the area.

Cordova Historical Museum: The Cordova Historical Museum is a cooperative effort of the City of Cordova and the Cordova Historical Society (CHS). The museum's stated mission is to "collect, preserve, interpret, exhibit and research objects and works of art which represent the history and cultural background of Cordova, the Copper River, Kennecott, Katalla, Prince William Sound and adjacent areas in order to educate and promote historical knowledge." It also promotes and nurtures current and evolving culture by supporting local artists, particularly those whose work is directly influenced by the region it serves. The museum recently relocated to The Cordova Center. CHS owns the collection exhibited at the museum and in archives.

<u>Ilanka Cultural Center and Museum</u>: Operated by the Native Village of Eyak, the Ilanka Cultural Center is located in Cordova. Its mission is to revive and preserve the Eyak, Alutiiq, Ahtna, and Tlingit cultures through educational displays, digital storytelling, and classes in traditional art forms. The center also provides a venue for local artists to expand their skills and market their artwork and crafts.

<u>Prince William Sound Museum</u>: Operated by the Whittier Museum Association, the Prince William Sound Museum is located in donated space in the Anchor Inn. Its focus is the history, exploration, maritime, and naval history of the region with particular emphasis on Whittier's history as a military port and rail terminal as well as reflections on Alaska military heritage during World War II and the Cold War.

<u>Valdez Museum and Historical Archive</u>: With a mission to preserve, present, and interpret the heritage and culture of Valdez, the Copper River Basin, and Prince William Sound, the Valdez Museum and Historical Archive includes two facilities: the main museum and the Remembering Old Valdez Exhibit at a nearby facility. The permanent collection features exhibits that tell the history of Valdez, the Copper River Valley, and Prince William Sound at the main museum. The museum is also a venue for presenting special temporary exhibits on focused topics, local artists and their artwork, and other special events. An outreach and

Economic Growth for the Prince William Sound Region



The Cordova Center houses municipal offices as well as the library, museum, theater, and community meeting spaces. It opened in April 2016.



education program takes museum programs and artifacts into local schools. The museum is currently engaged in a pre-planning process for a museum capital project. The goal of this effort is to plan for the best way to present the museum's collections in the future and continue to integrate the museum as an important community institution and cultural tourism attraction.

#### **Community Centers**

Community centers play an important role in the life of rural Alaska communities. These facilities serve as meeting places, venues for community services, and help form a sense of cohesion and community identity.

The Cordova Center opened its doors in November 2015 after nearly 20 years of planning, fundraising, and construction. This multi-use facility now houses the library, museum, and municipal administrative offices. It also features a theater to accommodate movies, plays, and performances and provides a much-needed meeting space for the community.

Valdez Convention and Civic Center features a ballroom, theater complex, and other meeting rooms and amenities. The center's theater doubles as the community cinema. Built in 1982, the center brings meetings and events to the community as well as serves as an important civic asset.

In village communities, tribal halls and community centers serve multiple roles. These facilities house tribal staff and facilitate tribal governance, programs, and services. Tribal halls are also venues for community meetings and gatherings. These facilities also serve as a place to share and celebrate tribal and community history and cultures.

The Native Village of Chenega recently received a \$600,000 grant from the U.S. Department of Housing and Urban Development for the development of a tribal hall in the village. Additional funding and effort will be needed to plan and complete the facility. Tatitlek also seeks to modernize its Tribal Council Hall.

#### **Tribal Entities and Programs**

Each of the tribal entities identified in Figure II.C.1. on page 31, as well as the tribal consortium Chugachmuit, are engaged in educational and heritage preservation programs for the Alutiiq/Sugpiaq and Eyak cultures. Chugachmuit maintains a virtual museum and archive

Economic Growth for the Prince William Sound Region

of items held in museums around the world. Additionally, Chugachmuit has developed a preschool to the eighth-grade curriculum in Sugt'stun – the Sugpiaq/Alutiiq traditional language.

The Chugach Heritage Foundation (CHF) is a non-profit foundation which focuses on the preservation, awareness, and advancement of the Native cultures of the Chugach region, which includes PWS. CHF focuses on history, language, customs, arts, and other human endeavors. It provides scholarships for postsecondary education and vocational training.

Spirit camps are also avenues for promoting cultural awareness. Originated by the Chugach Alaska Corporation and now operated by CHF, the Nuuciq Spirit Camp provides a venue for elders and tradition-bearers to share and revitalize traditional lifeways, educate youth, and raise awareness of the indigenous cultures of the region. The Copper Mountain Foundation sponsors the Peksulineq Festival, known as Tatitlek Cultural Heritage Week, which also showcases traditional values through learning and practicing subsistence activities, language, art, and other skills.

The Alaska State Council on the Arts administers the Silver Hand Program, which helps consumers identify and purchase authentic Alaska Native art. It also provides artists with resources to promote their artwork. To participate in the program, the artist must be at least 18 years of age, be a full-time resident of Alaska, and be a documented member of a federally-recognized tribe. Currently, there are 25 registered Silver Hand artists in the PWS region. Figure II.C.3. summarizes Silver Hand permittees by community of residence.

Figure II.C.3. Silver Hand Permit Holders in Prince William Sound Communities

	Chenega Bay	Cordova	Tatitlek	Valdez	Whittier
Silver Hand Permit Holders	2	13	0	7	3

Source: Alaska State Council on the Arts

#### Libraries

The Cordova Public Library recently relocated to the new Cordova Center. Based on 2013 data, 86 percent of Cordovans were registered users of the library. The library has a collection of more than 22,000 books in print, nearly 8,800 E-books, and additional special media collection. Annual attendance totaled 22,694 visits or nearly ten visits per resident (9.86). The library further provided reference materials and Internet access, supporting 9,268 public Internet sessions.

The Valdez Consortium Library is a collaboration between the City of Valdez and the Prince William College that fulfills a dual role of public and academic library. Its collections include 49,450 books in print, 8,777 E-books, reference materials, periodicals, and electronic media. Annual attendance totaled 38,042 visits or 9.28 visits per resident. The library also provided nearly 15,000 online sessions for members of the public.

#### **Community and Special Events**

Community events are an essential aspect of the region's cultural life. Many of these events also contribute to the regional economy by encouraging travel to and throughout the region.

Each community has local celebrations and observances to mark holidays, changing seasons, and special occasions. These events are an essential aspect of placemaking in the region, creating a sense of cohesion and shared identity. Most of these events are local in nature. However, a handful of these events attracts significant visitor interest.

Cordova hosts the Copper River Delta Shorebird Festival each year in early May; capitalizing on the migration of five million shorebirds, raptors, waterfowl, and songbirds as they pass through the area. Birders, photographers, and other visitors also flock to the community to witness this spectacle of nature and enjoy a host of activities including a birding challenge, guided viewing opportunities, lectures, and other community events. The Salmon Jam – Copper River Wild Salmon Festival is a developing event that incorporates music, art, local seafood, and other activities as part of a mid-summer community celebration.

Cordova seafood harvesters and processors have marketed Copper River salmon through successful "First Fish" events which tout the early arrival of Chinook and sockeye salmon to

the delta. While not organized as a community event, special air cargo planes are staged in the community to rush fresh salmon to waiting restaurants, stores, and buyers elsewhere in Alaska and the Lower 48 states. The arrival of the 'First Fish' garners media and foodie attention.

Valdez plays host to a variety of events that capitalize on the area's mountainous terrain, winter season, trails, and sport fishing opportunities. Outdoor activities and adventure events include both annual and periodic events for cross-country skiing, ice climbing, fat tire bike racing, the annual Mountain Man Hillclimb, the Snowkite Festival, and rock climbing. An annual Fly-in and Aviation event in May brings aviation enthusiasts from near and far to witness stunt flying, vintage planes, and various competitions.

Valdez is also home to a number of sport fishing derbies that capitalize on the salmon and halibut fisheries in the Sound.

Gold Rush Days is a 5-day celebration of Valdez' gold rush history that takes place each year in August. The event features a parade, food and talent events, competitions, and entertainment.

Prince William Sound College hosts the Last Frontier Theatre Conference each year in June. Participants are completely immersed in the theater arts for eight days, with a blend of performances, developmental readings, classes, and social events. The event attracts playwrights, actors, directors, and theater enthusiasts.

#### **Nonprofit Organizations**

In addition to the nonprofit organizations cited above, many nonprofit organizations provide community programs and services in the region. According to the Alaska Department of Commerce, Community, and Economic Development, there are 21 registered nonprofit organizations registered in the region. The U.S. Cluster Mapping Project identifies Local Community and Civic as the largest local cluster for the Valdez-Cordova Census Area in 2014. The cluster accounted for 317 jobs in the area.



**Economic Growth for the Prince William Sound Region** 

# **SECTION II: REGIONAL BACKGROUND**

# Part D. Infrastructure, Utilities, and Transportation

### 1. Energy Systems

#### **Electric Power**

The sources and structures for electric power vary across the region based on community size, electrical utility, and viability of alternative and renewable energy.

Four alternative energy projects are at various stages of development. In Chenega Bay, a hydroelectric project is in the design and permitting stage. When complete, this run of river system will have a capacity of 54 kilowatts and produce 370 megawatt hours per year. Over the life of the project, it will displace 800,000 gallons diesel fuel.

In Cordova, the Crater Lake hydroelectric and water project is in the feasibility and design stage. A January 2016 feasibility report concluded that the project is feasible and will reduce diesel use by 25 percent. Depending on final operating characteristics, the project could generate more than two million kilowatt hours and displace 1.7 - 2 million kWh per year of diesel use.

A feasibility study for a Cordova biomass project was completed in 2013, estimating 1,460 cords of wood, 50-80 bales of cardboard (500 lb/ea) could be used to offset diesel use. The economics of the project given current fuel prices led to a decision to delay further implementation.

The Allison Creek hydroelectric project is under construction in Valdez and is slated for commissioning in 2016. When brought online, this project will displace 725,000 gallons of

Allison Creek Hydropower Project near Valdez. Construction of Powerhouse and Penstock. The project will be commissioned in 2016.



Figure II.D.1. Prince William Sound Electric Power Sources, Uses, and Rates<sup>1</sup>

		Chenega Bay	Cordova	Tatitlek	Valdez	Whittier
Electric Utility		Chenega IRA Council	Cordova Electric Cooperative	Tatitlek Electric Utility	Copper Valley Electric Association	Chugach Electric Association
System (	Capacity	175 KW	10.9 MW	315 KW	8.9 MW	662.8 MW
ates	Commercial	\$0.67	\$0.39	\$0.87	\$0.18 - \$0.282	\$0.14
Electric Rates (\$/kWh)	Residential	\$0.67	\$0.39	\$0.87	\$0.18 - \$0.282	\$0.14
Elec (\$	Rate w/PCE <sup>3</sup>	\$0.17	\$0.25	0.34	N/A	N/A
<u> </u>	Diesel	287,068	10,797,853	507,700	13,248,531	-
Production by Source Fuel (kWh)	Cogeneration	-	-	-	21,510,330	-
Production by ource Fuel (kW	Hydro	-	17,453,931	-	55,503,800	309,724,647
Pro Sourc	Natural Gas	-	-	-	-	2,449,640,393
	Wind	-	-	-	-	56,313,572
e by	Commercial	41%	70%	44%	2%	90%4
y Sale ner Typ	Community	15%	10%	17%	69%	10%
Electricity Sale by Customer Type	Residential	40%	18%	28%	29%	0%
ele C	Utility	4%	2%	11%	0%	0%

<sup>&</sup>lt;sup>1</sup> Prince William Sound Region Energy Plan

diesel fuel use annually. It will increase electric production from hydro by 15 million kWh each year. Overall production from renewable sources will total 64 percent once the project is fully operational.

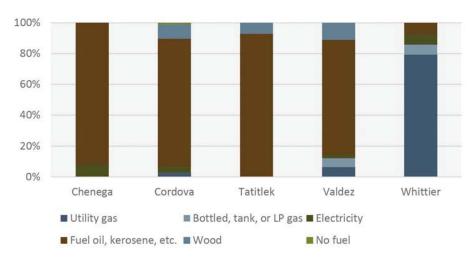
Figure II.D.1. summarizes the electric utilities, system capacities, electric rates, fuel sources, and sales by customer type for each community in the region.

#### **Space Heat**

Nearly three-quarters (74.9%) of occupied housing units in the region are heated with fuel oil. Wood (9.8%) and utility gas (8.1%) are the next most common fuels used for space heat.

At the community level, the source fuels for housing space heat vary significantly. However, fossil fuels remain the dominant fuel. Figure II.D.2. compares the proportion of housing units in each community based on source fuel for space heat.

Figure II.D.2. Source Fuels for Residential Space Heat by Prince William Sound Communities



 $<sup>^{\</sup>rm 2}$  Seasonal rates – summer (\$0.18) versus balance of year \$0.24 - \$0.28

<sup>&</sup>lt;sup>3</sup> The Power Cost Equalization (PCE) program serves to reduce rural energy costs relative to prevailing costs in regulated markets along the Rail Belt. See source

<sup>&</sup>lt;sup>4</sup> Residential use in Begich Tower is classified as commercial rather than residential Source: Alaska Energy Authority, Alaska Housing Finance Corporation, Alaska Department of Commerce, Community, and Economic Development

**Economic Growth for the Prince William Sound Region** 

The village of Tatitlek completed a power plant upgrade in 2015, garnering increased fuel efficiency and power production.



Photo Courtesy of Gray Stassel Engineering

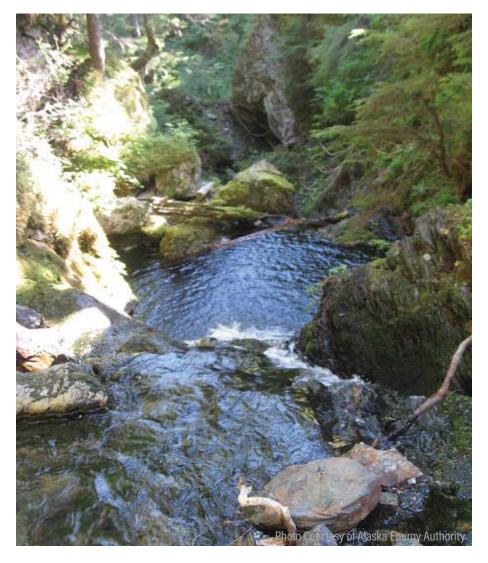
Figure II.D.3. Fuel Oil and Gasoline Prices as of January 2016

Community	Fuel Oil (one gallon)	Gasoline (one gallon)	Propane (100#)
Chenega Bay	\$6.05	\$6.70	\$16.23
Cordova	\$2.79	\$3.15	N/A
Tatitlek	N/A	N/A	N/A
Valdez	\$2.70	\$3.01	N/A
Whittier	\$2.21	N/A	\$3.94

Source: Alaska Department of Commerce, Community, and Economic Development

Pricing on most fuels are based on seasonal deliveries with prices set at the time the fuel is purchased. Smaller communities and those without road access typically purchase fuel in bulk twice each year. This purchase pattern locks in pricing for extended periods. Figure II.D. 3. recounts fuel oil and gasoline prices as of January 2016.

#### Anderson Creek is the proposed source for a hydroelectric project for Chenega Bay.



### 2. Telecommunications/Broadband

Broadband coverage in the Prince William Sound region has expanded since 2010, particularly in the western sound. However, there are areas of the region that remain unserved including Chenega Bay and other mostly remote and isolated parcels.

For the VCCA, 92.9 percent of households have access to one or more broadband platforms. Mobile wireless (96.9%) and DSL (89.7%) are the most widely available broadband platforms. Cable is available to 53.9 percent of households, generally in the three larger communities in the region. Fixed wireless is available to 19.42 percent of area households. Both CDMA and GSM technologies are deployed for mobile service.

Figure II.D.4. details the service platforms as well as download and upload speeds available in each community. Figure II.D.6. depicts the unserved areas of PWS as well as the service footprints for various broadband platforms.

Figure II.D.4. Telecommunications Service in Prince William Sound Communities

Community	Service Formats Available	Maximum Download Speed	Maximum Upload Speed
Chenega Bay	Cellular	N/A	N/A
Cordova	Wireline, Cellular, Broadband Internet, Broadband Cellular	10 Mbps - 25 Mbps	3 Mbps - 6 Mbps
Tatitlek	Cellular, Broadband Internet, Broadband Cellular	10 Mbps - 25 Mbps	3 Mbps - 6 Mbps
Valdez	Wireline, Cellular, Broadband Internet, Broadband Cellular	10 Mbps - 25 Mbps	3 Mbps - 6 Mbps
Whittier	Wireline, Cellular, Broadband Internet, Broadband Cellular	3 Mbps - 6 Mbps	1.5 Mbps - 3 Mbps

Source: Alaska Department of Commerce, Community, and Economic Development

### 3. Water, Sewer and Solid Waste

Water, wastewater, and solid waste services are provided by the city and tribal governments in the five communities. All water, wastewater, and solid waste services are regulated and inspected by the Alaska Department of Environmental Conservation, divisions of Water Quality and Environmental Health. Figure II.D.5. summarizes these services by community.

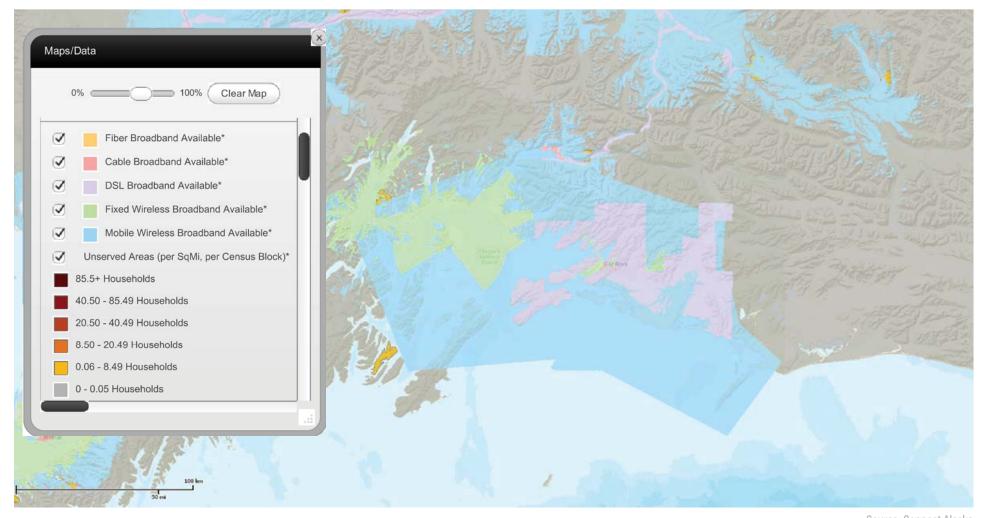
Figure II.D.5. Water and Wastewater Systems and Solid Waste Services for Prince William Sound Communities

Community	Water and Wastewater Systems	Solid Waste	Operator
Chenega Bay	Community Water System, Surface Water	Class III Community Landfill	Chenega IRA Council
Cordova	Class 2 Water Distribution, Waste- water Treatment and Collection Systems	Class II Municipal Solid Waste Landfill	City of Cordova
Tatitlek	Community Water System, Surface Water	Class III Community Landfill	Native Village of Tatitlek
Valdez	Class 1 and 2 Water Distribution Systems Class 2 Wastewater Collection and Treatment Systems	Class II Municipal Solid Waste Landfill and Inert Monofill Construction and Demolition Landfill	City of Valdez
Whittier	Small Water System		City of Whittier

Source: Alaska Department of Environmental Conservation

**Economic Growth for the Prince William Sound Region** 

Figure II.D.6. Broadband Format Footprints and Unserved Areas in Prince William Sound



Source: Connect Alaska

### **4. Transportation Systems**

#### **Port and Harbor Facilities**

Port and harbor facilities are vital to the prosecution of the region's major industries, provide access to communities and linkages to other transportation modes, and connect residents to the Sound as a vital source of transportation, commerce, subsistence, and recreation. These facilities range from small community docks to the world's largest container terminal.

In Cordova, Valdez, and Whittier, harbor facilities and services are owned and managed by the respective city government. The North Pacific Rim Housing Authority owns and manages the harbor and docking facilities in Chenega Bay and Tatitlek.

In 2015, the City of Valdez embarked on a major expansion of its small boat harbor after more than a decade of planning, design, and fundraising. The phased \$60 million project





^ Whittier Passenger Dock

**Tatitlek Community Dock** 

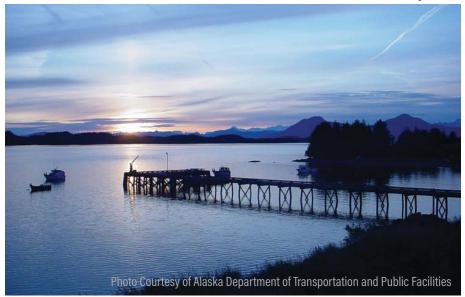


Figure II.D.4. Port and Harbor Facilities in Prince William Sound Communities

	Chenega Bay	Cordova	Tatitlek	Valdez	Whittier
Small Boat Harbor	12 slips 4 40'-foot fingers 2 64-foot fingers	727 slips (24' - 70')		511 slips (20' - 65')	350 slips
Transient Moorage	190' floating breakwater			900' of transient dock space	X and W floats - 24' and 28'
Docks (face'/avg depth')	Oil Spill Response Dock (300'/??')	City Dock (300'/) Municipal Dock (408'/25') T-Dock (USCG)	Oil Spill Response Dock (500'/??')	Kelsey Municipal Dock (600'/35') Valdez Container Terminal (700 - 1,200'/50')	DeLong Pier (425'/45') Passenger Dock (200'/18') Ocean Dock (200'/30')
Boat Yard/ Maintenance	N/A	150-ton marine travel lift Shipyard Vessel Haul-out	N/A	75-ton marine travel lift Storage Yard Maintenance Pads	22' - 45' 15-ton marine travel lift Storage Yard
Amenities	2 tidal ramps	160' light duty tidal grid 180' heavy duty tidal grid 2 launch ramps	2 tidal ramps		Tidal grid Launch Ramps
Services		Bilge and sewage pumpout, water, electric, phones, cable, parking		Water, Electric, Garbage	Bilge and Sewage pumpout, water, electric, parking

entails the addition of 132 boat slips of 100 feet each. Additional boat launches and upland work are also included in the project. Current funding will pay for dredging and construction of breakwaters. An additional \$19 million is needed to complete the project as envisioned.

The City of Cordova currently seeks to replace floats G - K in its small boat harbor. The existing floats are more than 30 years old. Initial estimates place the project costs at \$38 million. The city is currently seeking funding to advance the project.

Chenega Bay is currently seeking grant funding through the Administration for Native Americans (ANA) to establish a marine service center in the community. The project concept calls for fuel and retail services. Estimated costs for the project are \$xx million.

The Valdez Marine Terminal (VMT) is a private facility that serves as the terminus of the Trans-Alaska Pipeline. Managed and maintained by Alyeska Pipeline Service Company, in recent years the terminal has seen \$40 to \$50 million in capital improvement projects. In 2016, this investment will nearly double to between \$80 to \$90 million, largely for upland improvements to increase the safety and efficiency of terminal operations. The area surrounding the VMT is one of 12 security zones in the nation. These zones are enforced by



**Economic Growth for the Prince William Sound Region** 



the U.S. Department of Homeland Security and the U.S. Coast Guard. It includes the VMT, the Valdez Narrows Tanker Optimum Track Line, and 200 yards of water surrounding any tanker operating in the zone.

Figure II.D.4 summarizes harbor facilities in the five PWS communities.

#### **Alaska Marine Highway**

The Alaska Marine Highway (AMHS) provides passenger, vehicle, and freight transportation to all Prince William Sound communities. It is a vital transportation link between the region's communities and a gateway to accessing Prince William Sound.

Historically, the region has been served by various ships in the AMHS fleet, including the M/V Tustumena, the M/V Aurora, and the FVF Chenega. The fast ferry Chenega was ostensibly built to serve the PWS routes. However, shoreside infrastructure was not aligned with the Chenega. Ironically, the docks at Chenega Bay and Tatitlek are not configured to accommodate the newer, faster vessel.

Given ongoing state budgetary issues, the AMHS has configured the PWS routes for single ship service using the M/V Aurora. The single ship service format with the much slower Aurora resulted in reduced service to all communities except Chenega Bay. Figure II.D.5. recounts port calls, passenger embarkations and debarkations, and vehicle embarkations and debarkations for each community in the region from 2010 – 2015.

In a briefing to the PWSEDD Board of Directors, ADOT Deputy Commissioner Mike Neussl illustrated that both the Chenega and Aurora operate at a theoretical loss. However, the Aurora requires a smaller operating subsidy than does the Chenega. The trade-off in service is that the Aurora takes nearly three times as long to complete each route. The change in system usage between 2014 and 2015 illustrates the impact of this change is reduced usage ranging from 12.7 to 57.7 percent reduction in traffic and volume. See Figure II.D.5.

In the 2015 Business Climate Survey, business owners and managers cited ferry service as both a critical need and a threat to business viability due to the level and reliability of service.

## Section II: Regional Background

PWS Community	AMHS Service	2010	2011	2012	2013	2014	2015	% Change 2014 - 2015
	Port Departures	51	36	49	42	35	35	0.0%
	Embarking Passengers	127	180	173	203	113	145	28.3%
Chenega Bay	Disembarking Passengers	128	153	215	209	146	158	8.2%
	Embarking Vehicles	52	75	89	99	61	63	3.3%
	Disembarking Vehicles	70	77	72	-	53	66	24.5%
	Port Departures	289	283	292	307	284	287	1.1%
	Embarking Passengers	13,124	13,736	12,055	11,997	12,034	10,430	-13.3%
Cordova	Disembarking Passengers	13,335	13,846	12,350	12,225	12,164	10,250	-15.7%
	Embarking Vehicles	5,598	5,943	5,457	5,099	5,034	4,374	-13.1%
	Disembarking Vehicles	5,853	6,009	5,571	5,183	5,123	4,470	-12.7%
	Port Departures	32	30	32	34	16	17	6.3%
	Embarking Passengers	138	118	128	95	58	70	20.7%
Tatitlek	Disembarking Passengers	78	115	136	112	51	27	-47.1%
	Embarking Vehicles	24	18	22	21	21	11	-47.6%
	Disembarking Vehicles	19	23	24	27	26	11	-57.7%
	Port Departures	275	331	244	268	252	203	-19.4%
	Embarking Passengers	12,641	14,197	11,487	12,800	12,788	9,801	-23.4%
Valdez	Disembarking Passengers	9,604	10,635	8,640	9,859	9,461	7,260	-23.3%
	Embarking Vehicles	4,259	4,811	3,767	4,178	4,201	3,174	-24.4%
	Disembarking Vehicles	3,299	3,549	2,915	3,464	3,298	2,410	-26.9%
	Port Departures	340	380	413	375	405	320	-21.0%
	Embarking Passengers	18,712	21,323	20,143	18,041	20,543	16,851	-18.0%
Whittier	Disembarking Passengers	21,672	24,933	22,724	20,917	23,697	19,488	-17.8%
	Embarking Vehicles	8,326	8,945	8,830	7,771	8,528	7,082	-17.0%
	Disembarking Vehicles	8,916	10,026	9,413	8,220	9,110	7,598	-16.6%

Figure II.D.5 Alaska Marine Highway System Traffic and Volume, Prince William Sound Ports - 2010 - 2015

Source: Alaska Marine Highway System, Annual Traffic and Volume Report 2015

Economic Growth for the Prince William Sound Region

In June 2016, the Southeast Conference, a sister district to PWSEDD, signed an agreement with the State of Alaska to develop a strategic plan for the AMHS. The plan will address transformations that will lead to long-term viability for the ferry system. PWSEDD is recruit-

ing a local resident to participate in the steering committee for this effort. PWSEDD will also look to assess specific organizational and operational models for AMHS routes in the region as part its strategic direction and action plan for this CEDS.



#### **Air Transportation**

Air cargo, mail, and passenger service are provided by regional and state air carriers.

Chenega Bay and Tatitlek are served by a single scheduled carrier with twice a week service. Cordova and Valdez are served by multiple carriers with service by one or more carriers on a daily basis.

Intra-region air connections are limited. This necessitates charter flights, frequent trips through Anchorage, or intermodal connections to access flights to other communities in the region. Flight schedules change seasonally with more frequent flights in the summer.

Table II.D.6. summarizes the airports, facilities, carriers, and recent flight operations for each community.

Figure II.D.6. Airport facilities, carriers and flight operations in Prince William Sound Communities

Source:
Alaska Department of Transportation and Public Facilities Alaska Aviation System Plan,
U.S. Department of Transportation - Bureau of Transportation Statistics

	Airport	Runways/ Facilities	Carriers	Operations (2014)
Chenega Bay	Chenega Bay Airport (C05)	3,000' Gravel	Alaska Air Transport	Commercial: 70 Freight: 37k lbs
	Cordova Municipal Airport	1,800' Gravel 8,000' Water	22 based aircraft	Air Taxi: 3,500 GA Local: 2,500 GA Itin: 2,800
Cordova	M.K. "Mudhole" Smith State Airport (CDV)	7,499' Asphalt 1,899 Gravel Terminal	29 based aircraft Alaska Airlines Alaska Central Express Arctic Circle Air Service Northern Air Cargo, Inc. Ravn Alaska Servant Air, Inc. Tatonduk Flying Service	Commercial: 1,471 Air Taxi: 4,100 GA Local: 4,100 GA Itin: 1,855 Military: 1,010 Freight: 3.8M lbs.
	Strawberry Point (AK30)	1,600' Turf	Private	Unattended
Tatitlek	Tatitlek Airport (7KA)	3,701' Gravel	1 based aircraft Alaska Air Transport	Commercial: 183 Air Taxi: 1,250 GA Local: 100 GA Itin: 1,000 Freight: 98k lbs
	Robe Lake Seaplane Base (L93)	4,000' Water 2,000 Water	5 based aircraft	Unattended
	Valdez Hospital Heliport (1AK7)	40'	Not Applicable	Unattended
Valdez	Valdez Pioneer Field Municipal Airport (VDZ)	6,500' Asphalt Instrument Landing System, Control Tower Terminal	35 based aircraft Alaska Central Express Frontier Flying Service Grant Aviation Peninsula Airways, Inc. Ravn Alaska Wright Air Service	Commercial: 764 Air Taxi: 3,800 GA Local: 2,500 GA Itin: 2,500 Military: 500 Freight: 144k lbs.
Whittier	Whittier Airport (IEM)	1,480' Gravel	Not Applicable	Air Taxi: 20 GA Itin: 25

**Economic Growth for the Prince William Sound Region** 

#### **Roads and Highways**

Jurisdiction over surface roads, bridges, and ferry docks are shared between the Alaska Department of Transportation (ADOT) and local communities. In Cordova, Valdez, and Whittier, the local department of public works exercises management responsibility for local roads and coordinates with the ADOT on cross-jurisdictional issues. In Chenega Bay, Cordova, and Tatitlek, tribal entities also manage and maintain community roadways. Figure II.D.7. enumerates state and local road mileages for each community.

Several improvements projects are currently underway on the Richardson Highway from milepost 0 to milepost 12. These projects involve resurfacing from milepost 0 to milepost 4, improving intersections at Mineral Creek Loop, and raising the roadbed between milepost 6 and 12 where the Valdez River encroaches upon the roadway.

Three projects in the PWS region are in the current State Transportation Improvement Plan (STIP 2016 – 2019). Maintenance and operations funding for the Anton Anderson Tunnel and approaches is funded at \$4.15 million annually through FFY19. For FFY2016, \$5.5 million is appropriated through the BIA's Indian Reservation Road Program (IRR) and state match to the Federal Highway Administration for the construction of four miles of road from Orca Cannery to a deep water port site at Shepard Point near Cordova. This project is under the auspices of the Native Village of Eyak. The third project is a realignment of Whitshed Road to accommodate non-motorized traffic from the Copper River Highway intersection approximately 0.75 miles to the intersection with Orca Inlet Drive. The later is slated for phased construction over the next three fiscal years at a total cost of \$9.1 million.

In August of 2011, the natural migration of the Copper River led to the failure of Bridge 339 at mile 36 on the Copper River Highway. Ongoing erosion has wiped out an addition 1,100 feet of the highway and threatens Bridge 340. The highway has been closed from milepost 35 to its end near Child's Glacier and the Million Dollar Bridge. The Alaska Department of Transportation and Public Facilities analyzed options to replace Bridge 339. Early estimates place the costs at \$51 million. The ADOT also speculates that there will be ongoing needs across the 9-mile span of the delta for continuing road and bridge replacements. There is no active plan to schedule and fund the project at this writing.

The Richardson Highway from Valdez to Glenallen and the length of the Copper River Highway are designated as State Scenic Byways by the ADOT. The Alaska Railroad and the Alaska Marine Highway also hold the State Scenic Byway designation. The Alaska Marine

Figure II.D.7: Road Miles in Prince William Sound Communities

Community	ADOT Roads	City or Tribal Roads	Total Local Road Miles
Chenega Bay	0.2069	1.9909	2.1978
Cordova	75.2080	14.6	89.8080
Tatitlek	0.3868	1.8741	2.2609
Valdez	225.1734*	34.49	231.0234
Whittier	2.2795	2.4779	4.7574
PWS Total	303.2546	15.54449	330.0475

<sup>\*</sup> includes Richardson Highway mileage outside of the City of Valdez corporate boundary

Source: Alaska Department of Commerce, Community, and Economic Development

Highway is also recognized by the Federal Highway Administration as an All American Road, the highest designation in the National Scenic Byway Program, which is no longer funded under the Federal Highway Administration.



2014

2015

#### Alaska Railroad

Whittier serves as an intermodal connection point between marine transportation for passengers and freight and the Alaska Railroad. Because there is no direct rail connection between Alaska and the Lower 48, three rail barges sail to Whittier from Seattle and Prince Rupert, British Columbia. The railroad also carries passengers connecting with cruise ship arrivals or departures in Whittier, the Alaska Marine Highway, or simply visiting Whittier.

Figure II.D.8.
Alaska Railroad Freight and Passenger Traffic at the Port of Whittier 2010 - 2015

2011

2012

2013

2010

arrivals or departures in Whittier, the Alaska Marine Highway, or simply visiting Whittier.	Freight Tons	412,000	432,000	459,000	464,000	497,000	470,000
ARE THE RESIDENCE OF THE PARTY	Passengers	76,910	80,263	94,942	92,993	87,336	94,751
					Source: A	aska Paliroac	Congression
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**Economic Growth for the Prince William Sound Region** 

# SECTION II: REGIONAL BACKGROUND

## Part E. The Economy and Factors Affecting Economic Performance

#### 1. Economic Profile

A thorough characterization of the Prince William Sound regional economy presents several challenges. Temporal and geographic inconsistencies with data sets, data that are suppressed due to three or fewer firms operating in a specific industry or category, and unreported data, such as seafood harvesting and federal employment, present difficulties in fully drawing an accurate portrait.

Several assumptions have been made to work around these challenges. To address temporal issues, we have endeavored to provide the most current data. However, a majority of agencies have yet to finalize 2015 data. Every effort has been made to standardize data for 2014, but, even so, a small portion of that data has yet to be published. In some cases, data presented herein may contain blended year data sets. These circumstances and any related assumptions are labeled or footnoted.

Where community or place level data is not available, we either label the data as Valdez-Cordova Census Area (VCCA) or estimate the proportion attributable to the Prince William Sound region. In the case of the former, the reader is cautioned to recognized that the data may over represent the circumstances in the Prince William Sound region. With regard to estimates, we have defaulted to using 69.5 percent of the census area values, based on the proportion of the census area population residing in the five PWS communities. This work around likely underestimates the values for the region. While neither option is ideal, we have endeavored to clearly label the way the data is presented.

#### **A Brief Historical Perspective**

The Prince William Sound region has long been a crossroads of economic interests and opportunities. For millennia, the indigenous peoples of Alaska have moved and settled throughout the region. Contact and trade between the Alutiiq (Sugpiaq), Eyak, Tlingit, and Athabascan peoples are well-documented.

Trade, exploitation of resources, and the strategic advantages of Alaska's location were also the motivation for European explorers, Russian colonists, and U.S. acquisition of Alaska in 1867. The first PWS seafood processors were established in the 1880s. The Gold Rush of 1898 brought an influx of prospectors to the region and led to the establishment of a military fort at the head of Valdez Bay. A road and other new infrastructure soon followed. The dawning of the 20th Century marked the beginning of a flurry of industrial mining activity, largely in support of the Kennecott Mine, north of PWS in the Wrangell-St. Elias Mountains. However, small producing mines dotted the region for nearly three decades.

World War II focused national and international attention on Alaska's strategic global location. Expansion of military assets in the state necessitated the development of a U.S. Army facility at what is now present-day Whittier.

The Great Friday Earthquake of 1964 brought devastation and disruption throughout the Sound. Redevelopment of communities and infrastructure continued for more than a decade thereafter.

Development of oil resources and the construction of the Trans-Alaska Pipeline in the late-1960s and 1970s once again put the PWS region at the forefront of economic development due to its strategic location and year-round ice-free ports. The 1970s also saw the establishment of Alaska Native Corporations, limited entry fisheries, and the beginnings of the region's aquaculture sector.

The 1989 Exxon Valdez oil spill brought ecological, social, and economic devastation to the region. While disruptive on many levels, the incident laid the foundations for continuous monitoring of maritime traffic, provided the impetus for ecosystem monitoring, and motivated citizen engagement. These outcomes brought new jobs and areas of specialization to the region.

Today, the economy of the Prince William Sound region remains largely dependent on the extraction and distribution of natural resources. However, the region's five communities have distinct economic characteristics. Chenega Bay and Tatitlek are most similar among the five communities. Each village has a mixed cash and subsistence economy. Local government is the largest wage and hour employer in both villages.

Cordova's economy is dominated by seafood harvesting and processing as evidenced by commercial fishing permit holders, licensed crew members, and manufacturing employment. Local government and the trade, transportation, and utilities industry also account for a large proportion of Cordova's employment.

Valdez's role as the terminus for the Trans Alaska Pipeline defines much of its economy. However, the trade, transportation, and utility industry and local government generate the largest proportion of jobs. Other service sectors comprise more than one-third of the local economy, including leisure and hospitality, educational and health services, and professional and business services.

In Whittier, local government and the trade, transportation, and utility industry provide the largest proportion of jobs. The community's roles as a gateway to the western Sound and as an important intermodal port generates additional jobs in tourism and outdoor recreation services, other services, construction, and state government.

Figure II.E.1. Prince William Sound jobs and wages from an output perspective 2014

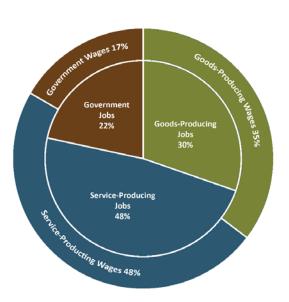


Figure II.E.1. Employer versus non-employer jobs and wages in Prince William Sound 2014

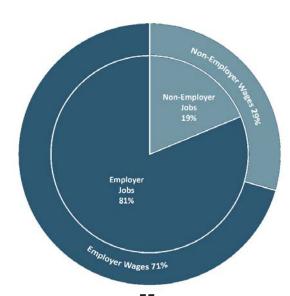
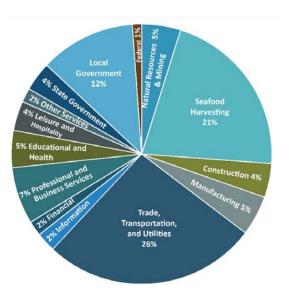


Figure II.E.3. Prince William Sound 2014 wages by industry



**Economic Growth for the Prince William Sound Region** 

From an output perspective, the Prince William Sound economy is predominantly a service-producing economy (48%). Goods-producing jobs account for 30 percent of the region's jobs. Nearly one-quarter of the region's jobs are with federal, state, or local governments. Figure II.E.1. characterizes regional jobs and wages in terms of outputs.

Another perspective on the regional economy is employer versus non-employer jobs. Eight in ten jobs in the region are conventional wage and hour jobs. Nearly one in five jobs are classified as nonemployer or self-employment jobs. While self-employment accounts for

less than 20 percent of all jobs, it accounts for 29 percent of wages earned. Figure II.E.2. depicts employer and nonemployer jobs and wages for 2014.

A third perspective on the PWS economy is that of major industries. Trade, transportation, and utility (26%), seafood harvesting (21%), and local government (12%) are the top three industries in terms of the number of jobs and associated wages. Business and professional services (7%), manufacturing (5%), and educational and health services (5%) are the next three largest industries. Figure II.E.3. provides an breakdown of the regional economy by major industries.

Figure II.E.4. Prince William Sound jobs by industry 2010 - 2014<sup>1</sup>

Industry	2010	2011	2012	2013	2014 Jobs	2014 Wages	Change 2010 - 2014	% Change 2010 - 2014	Change 2013 - 2014	% Change 2013 - 2014
Natural Resources and Mining	174	167	179	178	176	\$9,570,755	2	1.1%	-2	-1.1%
Seafood Harvesting <sup>2</sup>	750	770	791	788	757	\$42,159,790	7	0.9%	-31	-3.9%
Construction	202	190	225	215	208	\$8,305,751	6	3.0%	-7	-3.3%
Manufacturing	261	247	257	254	263	\$9,868,505	2	0.8%	9	3.5%
Trade, Transportation, and Utilities	845	836	832	822	823	\$52,542,585	-22	-2.6%	1	0.1%
Information	80	88	84	83	83	\$4,802,890	3	3.8%	0	0.0%
Financial Activities	111	113	107	94	97	\$3,666,073	-14	-12.6%	3	3.2%
Professional and Business Services	334	337	359	364	402	\$14,019,392	68	20.4%	38	10.4%
Educational and Health Services	298	317	307	294	289	\$9,112,959	-9	-3.0%	-5	-1.7%
Leisure and Hospitality Services	429	425	441	427	385	\$7,277,492	-44	-10.3%	-43	-9.8%
State Government	199	179	180	184	171	\$7,159,785	-28	-14.1%	-13	-7.1%
Local Government	657	650	671	629	663	\$23,478,881	6	0.9%	34	5.4%
Federal Government <sup>3</sup>	167	167	167	167	167	\$2,237,537	0	0.0%	0	0.0%
Other	157	164	147	140	147	\$3,474,444	-10	-6.4%	7	5%
Total	4,664	4,650	4,747	4,639	4,631	\$197,676,839	-33	-0.7%	-9	-0.2%

<sup>1 -</sup> Nonemployer jobs estimated from VCCA figures; 2 - Based on permit holders and licensed crew members residing in the region; 3 - Includes U.S. Coast Guard and U.S. Forest Service personnel

Source: Alaska Department of Labor and Workforce Development, U.S. Bureau of Economic Analysis, Alaska Department of Fish and Game

For the period 2010 through 2014, the region lost a total of 33 jobs or less than one percent of total jobs. Figure II.E.4. enumerates these job figures by industry with five year and one year change comparisons.

Over the five year period, the largest increases in jobs were seen in the business and professional services, information, and construction industries. Conversely, the largest losses were seen in financial activities, state government, and leisure and hospitality services. While the overall losses during this period were negligible, additional losses in the near and long-term are likely, given state population and job forecasts and pricing volatility in oil and seafood.

While there was a slight increase in monthly average employment between 2014 and 2015 for the state as a whole, the ADOL anticipates a loss of 2,500 jobs in 2016. This projection includes losses in the oil industry (-7%), construction (-5%), and state government (-3.9%). The long-term forecast, looking out as far as 2022, continues to call for long-term job growth across all industries, averaging 10.8 percent.

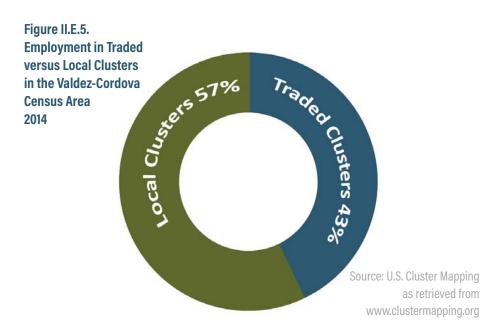
#### **Cluster Analysis - Valdez-Cordova Census Area**

An ongoing analysis conducted by the Institute for Strategy and Competitiveness at Harvard Business School using county or census area employment data characterizes regional economies based on economic clusters of related and interconnected industries.

Traded clusters are those industries that primarily serve markets or customers outside of the region. Essentially, these clusters are bringing new dollars into the region. These industries are exposed to competition from other regions. Strong traded clusters are those with a high degree of concentration of labor share and specialization in comparison to other regions and national averages.

Local clusters are comprised of industries that serve the local market. Employment in local clusters typically comprises a majority of a region's jobs, but may represent a lesser proportion of the wages in the region.

For the Valdez-Cordova Census Area (VCCA), employment in traded clusters comprised 43 percent of total employment. Conversely, local cluster employment accounted for the remaining 53 percent of jobs.



The analysis has some deficiencies in as much as it is based on reported wage and hour employment. While it captures seafood production and processing employment, it does not capture any labor involvement in seafood harvesting, active duty military, or the self-employed.

Figure II.E.5.characterizes the distribution of jobs between traded and local clusters in the VCCA economy. Figure II.E.6. further details traded and local clusters and compares the area's relative concentration or specialization in these clusters to 3,221 counties in the U.S.

Five strong traded clusters are noted for the Valdez-Cordova Census Area. A strong cluster is identified as one that has a high degree of labor concentration or specialization *vis a vis* employment for that cluster in the other counties and census areas in the U.S.

Based on these comparisons, the VCCA has strong traded clusters in oil and gas production and distribution, hospitality and tourism, water transportation, fishing and fishing products, and electric power generation and transmission. These five clusters have consistently

Economic Growth for the Prince William Sound Region

ranked as strong clusters. Again, the fishing and fish products employment is understated because seafood harvesters are not included in the employment figures that form the basis of this analysis. Two additional clusters emerged with a strong cluster ranking, based on 2014 employment figures. Transportation and logistics and environmental services joined the five other longstanding strong clusters.

The U.S. Cluster Mapping project also evaluates regions based on overall economic performance, business environment, and demographics and geography. Factors that contribute to improved economic outcomes as well as lagging economic outcomes are noted.

Economic Performance: The VCCA enjoys a high degree of prosperity as expressed by GDP per capita and average private wage, ranking nationally in the first quintile for each measure. In addition to ranking highly, the region saw positive growth for each metric, in real terms, between 1998 and 2013. Other factors contributing positively to overall economic performance were labor force productivity and a relatively low, though increasing, rate of poverty (9.9%). Exports as a proportion of GDP were at 10.3 percent for the period, placing the area in the second quintile nationally. However, a slowing rate of growth for this measure ranked in the fourth quintile.

The area ranked in the fourth quintile for factors such as labor force mobilization, private, non-agricultural employment, and utility patents. Unemployment remained in the fifth quintile despite a slight improvement over the period.

<u>Business Environment</u>: The quality of the VCCA business environment is ranked highly in terms of education outcomes for the workforce. The proportion of the population aged 25 years or more that have attained a high school diploma (91.6%) as well as those that have attended some college or attained an associates degree or higher (65 %) placed the area in the first quintile nationally. The proportion of traded cluster employment in strong clusters (87%) also placed the VCCA in the first quintile.

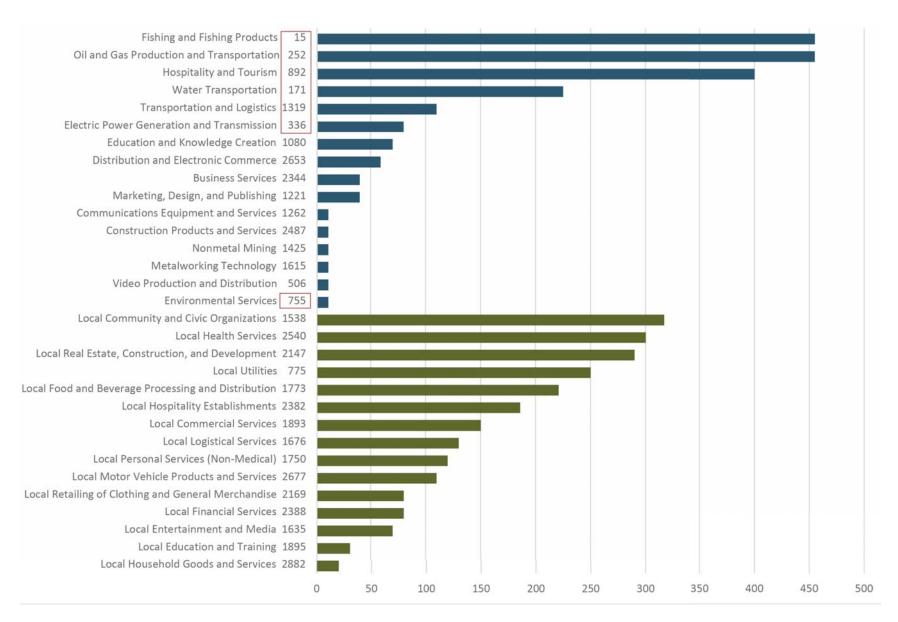
The area ranked in the fourth or fifth quintile for factors such as research and development expenditures per capita (\$399), STEM degrees awarded, and unionized workers (17.6%). The proportion of manufacturing jobs as a percent of all jobs improved to 10.5 percent, moving the area from the fourth to the third quintile.

<u>Demographics and Geography</u>: Net international immigration is the only metric for which the VCCA ranked in the first quintile.

All other ranked demographic and geography metrics placed the VCCA in the fourth or fifth quintiles. Factors such as smaller average firm size, the high proportion of government employment, a declining proportion of young adults in the population, low population density, and negative net domestic migration placed the area at or near the bottom of all counties in the U.S.



Figure II.E.6. Valdez-Cordova Census Area Traded and Local Clusters based on 2014 Employment



**Economic Growth for the Prince William Sound Region** 

### 2. Traded Clusters

After reviewing the U.S. Cluster Mapping Project data and considering local perspectives, the planning process revised and focused on four traded clusters.

The Oil and Gas Distribution and Transportation cluster accurately reflects the activities surrounding the Trans Alaska Pipeline Service Company, its Valdez Marine Terminal, and supporting services.

The Fishing and Fishing Products cluster has been relabeled the Seafood Harvesting, Production, and Processing cluster. This label more accurately reflects the three sub-sectors that make up the cluster: commercial fish harvesting, aquaculture and mariculture, and the manufacturing of seafood products.

The Water Transportation cluster largely captures the marine traffic associated with the Oil and Gas Distribution and Transportation cluster. However, because marine transportation is such a vital aspect of the region. This cluster has been re-imagined as the Marine Transportation and Support Services cluster.

Prince William Sound has long attracted visitors from around the world as well as served as an important recreational destination for Alaskans and other adventure seekers. For these reasons, the Tourism and Hospitality cluster is more accurately characterized as the Tourism and Outdoor Recreation cluster.

Each of these clusters is explored further to highlight its contributions to the economy as well as strengths, weaknesses, opportunities and threats that may impact future cluster activity.



### 2.1 Oil and Gas Production and Transportation

Oil and Gas Production and Transportation is a primary traded sector for the region. Based on analysis by the U.S. Cluster Mapping Project, this cluster has a high degree of employment specialization and share in comparison to other areas and national employment levels. A location quotient of one would indicate employment on par with that of the nation. For the Valdez-Cordova Census Area, the location quotient (LQ) for Oil and Gas Production and Transportation is 13.54, based on 2014 employment data. This is down from 2013 when the LQ was 15.59.

Valdez is the southern terminus and off-loading point for the Trans Alaska Pipeline System (TAPS), which is operated by the Alyeska Pipeline Service Company. Alyeska's Valdez Marine Terminal (VMT) occupies a 1,000-acre site across from the City of Valdez on Valdez Arm. Crude oil is measured and stored in 14 storage tanks with a combined capacity of 7.13 million barrels. Two loading berths accommodate oil tankers, which arrive, load crude oil over the course of a day, and exit to deliver crude oil to west coast refineries.

Figure II.E.7. Trans Alaska Pipeline Average Daily Throughput in Barrels per Day 2009 - 2015

Source: Alaska Department of Natural Resources



Photo courtesy of ConocoPhillips Alaska

Figure II.E.8. Alaska North Slope West Coast Average Spot Price January 2009 - May 2016



**Economic Growth for the Prince William Sound Region** 

In addition to pipeline and marine terminal operations, Alyeska's role encompasses the Ship Escort/Response Vessel System (SERVS). The mission of SERVS is to prevent oil spills by assisting tankers in safe navigation through PWS and to provide effective response services to the Valdez Marine Terminal and crude oil shippers. SERVS has response centers in each of the five Prince William Sound communities, including more than 400 fishing vessels on contract under the Vessels of Opportunity program.

In Valdez, the Alyeska Pipeline Service Company has a workforce that averages between 200 and 260. Alyeska also employs a significant number of contractors to support operations at the VMT and SERVS. This employment is captured in the Trade, Transportation and Utilities economic sector (see Figure II.E.4). Four of the top ten employers in Valdez are directly connected to the oil industry. Residents from other PWS communities also find employment at the VMT, SERVS, and support contractors.

After 40 years of operation, TAPS faces significant operational challenges, many brought about by declining throughput, changing operating conditions, and aging infrastructure. In 2012, throughput in TAPS averaged 548,000 barrels per day (BPD). By 2014, that volume had decreased to 513,400 BPD. Further declines were seen in 2015, with BPD averaging 508,400.<sup>20</sup> Historically, this volume totals eight percent of U.S. domestic oil production and more than 20 percent of West Coast refinery feedstock. Figure II.E.7. details average daily throughput from 2009 through 2015.

Production from historically-producing fields continues to decline at a sustained rate of five to six percent per year. BP Alaska recently announced plans to decrease production at Prudhoe Bay by an estimated 20 – 40,000 BPD. The decline in oil prices over the past three years threatens the investment climate in the oil and gas sector. However, a handful of new projects continues to move forward. In 2015 and 2016, ExxonMobil began production at Point Thomson and ConocoPhillips began production at the CD5 site in the National Petroleum Reserve. ConocoPhillips recently announced it will expand its CD5 operations; committing necessary capital to more than double the number of wells at the site. Figure II.E.8. presents the prevailing spot price for Alaska North Slope Crude from January 2009 through May 2016. The U.S. Energy Information Administration recently revised its crude oil price forecast, increasing its average prevailing price per barrel up by \$6 through 2017.

Declining throughput presents ongoing operational challenges to Alyeska. Maintenance, modernization, and monitoring activities are a priority for sustaining TAPS operations.<sup>22</sup> The

company has implemented hundreds of maintenance and modernization projects across all of its operations. In recent years, these projects have averaged \$45 – 50 million in capital investment at the VMT. For 2016, Alyeska plans approximately \$80 million in capital improvements at the facility.<sup>23</sup>

Cooler, slower moving crude oil results in increased risk of corrosion and wax accumulation in the pipeline. Standard operational practices have been modified to address low throughput and the resulting operational challenges. Alyeska continues to adapt its operations as well as assess the future likelihood of intermittent flow scenarios.<sup>24</sup>

In March 2016, Alyeska announced that it would replace its longtime contractor for its SERVS unit. The company committed to a two-year transition process. The new contractor is Edison Chouest Offshore, based in Cut Off, Louisiana. This change will likely impact up to 250 direct jobs in Valdez. The transition will be complete by June 2018.

Additionally, Alyeska Pipeline Service Company, the Alaska Department of Environmental Conservation, and the Prince William Sound Regional Citizens' Advisory Council provide employment in preparing oil spill contingency plans. All communities share in oil spill prevention and emergency response drills.

#### Vessel of Opportunity training in Cordova engages local boats in oil spill drills



Strengths	Weaknesses	Opportunities	Threats
New development at Prudhoe Bay, NPR-A, and Point Thomson fields has increased throughput in 2016	Throughput in the Trans Alaska Pipeline has been declining by a sustained 5 - 6 percent in the past five years	Ongoing maintenance and modernization projects create job and contracting opportunities	Weak oil prices and global instability in the oil and gas industry
Legacy fields are anticipated to continue production for another 40 - 50 years	Aging TAPS and VMT infrastructure requires substantial ongoing maintenance	Establish strong regional relationship with new SERVS contractor Edison Chouest; facilitate job fair in partnership with Job Center	Operating or production disruptions elsewhere in the system that would delay or prevent TAPS or VMT operations
High-wage occupations  40-years of continuous operations in the region	Some nonresident workforce  Aging workforce	Align training opportunities to emerging technical requirements	Throughput falling below low flow thresholds and leading to intermittent delivery scenarios
High degree of labor concentration and specialization	Primary drivers of the sector are outside of the region	Support local efforts to diversify	Environmental damage resulting from spills or operating errors
Manager 1	Concentration/specialization largely in one community		Increased technical and certification requirements in all occupations in the oil and gas sector
The state of the s	Weak oil prices and global instability in the oil and gas industry		Emission control regulations and low sulfur standards impose costly requirements
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**Economic Growth for the Prince William Sound Region** 

### 2.2 Seafood Harvesting, Production, and Processing

The combined activities of commercial seafood harvesting, production, and processing make up one of the largest sectors of the regional economy. The Cluster Mapping Project captures only a small portion of the total employment in this sector, but it still identifies Fishing and Fishing Products as a strong traded cluster with a location quotient of 261.53 based on 2014 employment.

mariculture hatcheries and farms. Processing is best represented by the Fishing and Fishing Products data in the U.S. Cluster Mapping Project. It is composed of mostly large shoreside processing plants that buy from harvesters and engage in light manufacturing to produce various seafood product forms.

Figure II.E.9. 2015 Prince William Sound



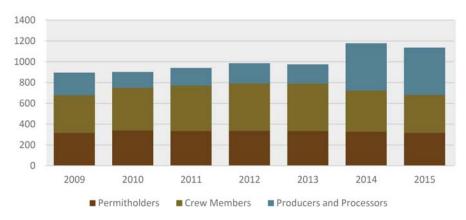
In 2015, the sector landed or produced more than 361.5 million pounds of seafood with a landed value of more than \$123.6 million. Figure II.E.9. outlines this activity by major species or species groups. It does not include mariculture farmgate values due to confidentiality issues. Also missing is the value of landings for Whittier, which are included in Cook Inlet region landings. These numbers would also be suppressed due to confidentiality.

Sector output varies from year to year due to natural variations in fish lifecycles and environmental variables. Between 2009 and 2015, fishery landings ranged from a low of 94.7 million pounds to last year's high of 361.5 million pounds. The average for the period was 221.3 million pounds. Exvessel values ranged from \$55.8 million to \$173.2 million. Figure II.E.10. summarizes PWS fishery landings and exvessel values for the period.

First wholesale net weight for the same period ranged from 50.8 million pounds to 170.9 million pounds. Product values at first wholesale ranged from a low of \$129.6 million to a high of \$387.9 million. Figure II.E.11. provides first wholesale net weight and values..

Employment in the sector can also vary significantly. Overall, employment has increased in the sector between 2009 and 2015. This increase is largely due to a more than doubling of jobs in the production and processing sub-sector. Permitholders that fished have been stable during the period. Crew member employment has declined in the past two years. Figure II.E.12.. demonstrates these trends.

Figure II.E.12.
Seafood Harvesting, Production, and Processing Employment 2009 - 2015



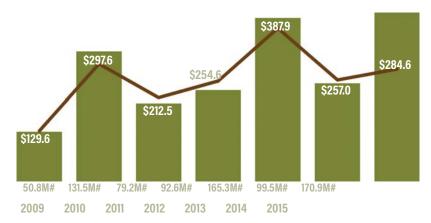
Source: CFEC, U.S. Cluster Mapping

Figure II.E.10. Seafood Harvest and Exvessel Value Prince William Sound 2009 - 2015



Source: COAR Report, Alaska Department of Fish and Game

Figure II.E.11 Seafood Net Weight and First Wholesale Value Prince William Sound 2009 - 2015



Source: COAR Report, Alaska Department of Fish and Game

Economic Growth for the Prince William Sound Region

Strengths Weaknesses		Opportunities	Threats		
Historically strong fisheries resources	Weak economic connection with floating processors operating in the Sound	Test fishery for Tanner crab and pollock could re-establish these fisheries for commercial	Climate change impacting environmental characteristics and fishery resource abundance		
Successful salmon enhancement programs	Higher value fisheries make up only 11% of total	harvest	Abrupt closure of Whittier-based processor		
Strong brand identity for Alaska Seafood and Copper River salmon; Copper River/Prince	landings by weight	Develop Community Quota Entity capacity in Chenega Bay and Tatitlek	prior to 2016 season		
William Sound Regional Seafood Development Association	2016 salmon returns were well below 10-year averages	Partner with the AFDF on aligning and implementing the Mariculture Initiative in PWS	State budget impacts on fishery management and research		
Expansion and redevelopment of shoreside processors; interest in more new processing	Long-term closure of herring fishery due to nonrecovery after the oil spill	Retain more haul-out and major repair work	Reduced access to fisheries due to increasing or changing regulations, management regimes,		
facilities	Continuing reliance on diesel fuels	within the region; create interest incentive for this on state engine energy efficiency loans	and related legislation (CAA, CWA, MMA, NEPA)		
Established mariculture operators and access to seed and required testing facilities	Aging of the workforce	Analyze sector waste stream volume and			
	High cost of entry for new entrants	utilization for potential efficiencies and new products			
		Partner with Alaska Maritime Works, school			
		districts, and PWSC on applicable CTE curriculum and concentration for this sector			
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### 2.3 Marine Transportation and Support Services

The Marine Transportation and Support Services cluster accounted for 225 jobs in the Valdez-Cordova Census Area in 2014. This level of employment resulted in a location quotient of 15.95, indicating both a high degree of employment specialization and employment share.

Three sub-clusters - water passenger transportation, boat building and repairing, and marine transportation services - form the foundation of the cluster. Labor specialization is high in each of these subclusters.

An additional 169 jobs in the Transportation and Logistics and Distribution and eCommerce clusters are closely linked to activity in the Marine Transportation and Support

 Cluster Snapshot:
 2014

 Jobs
 225

 Location Quotient
 15.95

 Change 1998 - 2014
 +175

 Change 2010 - 2014
 -34

 Outlook
 ←→

Services cluster. In fact, it appears that reporting errors or inconsistencies in labor data reporting may obscure a well-rounded view of the cluster.

Despite long-term employment growth for the cluster, there were reductions in the boat building and marine transportation services sub-clusters between 2010 and 2014.

Marine-based commerce and associated marine transportation is an essential part of the Prince William Sound economy. Oil tankers, oil industry escort vessels and work boats, freighters, ferries, fuel barges, cargo and rail barges, cruise ships, tour boats, commercial fishing boats, sport fishing charter boats, and privately-owned vessels ply the waters of the Sound. This volume of marine traffic requires an array of goods and services as well as docks, harbors, and maritime infrastructure.

There is no definitive source to quantify the frequency and volume of all marine traffic. Table II.E.13 outlines a partial list of the vessels, across all sectors, that are homeported in PWS. This information gives a sense of the quantity and range of vessels. In addition to homeported vessels, transient vessels add to the frequency and volume of marine traffic in PWS. Transient vessels include oil tankers (230 port calls), cruise ships (20 port calls), the Alaska Marine Highway ferry (862 port calls), rail and AquaTrain barges (est. 90 port calls), and other barges and freight vessels.

Figure II.E.13 Vessels Homeported in Prince William Sound (Partial)

Vessel Type	Count		
Commercial Fishing	492		
Fish Processing Vessel	5		
Freight Barge	2		
Freight Ship	2		
Oil Recovery	53		
Passenger	54		
Public Vessel, Unclassified	14		
Recreational	178		
Research Vessel	2		
Towing Vessel	11		
Other	14		



Economic Growth for the Prince William Sound Region

Strengths	Weaknesses	<b>Opportunities</b>	Threats		
13 % of all marine freight coming to Alaska moves through the ports of Whittier and Valdez	High transportation costs  Limited marine infrastructure in some	Existing dock facilities at the Port of Valdez have surplus capacity	Weak oil prices and declining throughput may reduce demand in the sector		
Long-time tug, barge, and containership operators with strong safety records	communities  Aging workforce	Pent up demand due to formerly high fuel prices	Lower than anticipated seafood harvests in 2016		
Aquatrain and Rail Barge connections remain strong	Proportion on nonresident workforce	Development and construction at military bases in the Interior	Emission control regulations and low sulfur standards impose costly requirements to repower the fleet		
Increased marine lift capacity in Cordova, Valdez, and Whittier	Limited land availability for upland development from harbors and marine facilities	Resource development in Interior and North Slope creates demand for high volume durable materials and goods	Increased competition from Outside and other Alaska ports for all levels of marine support		
Strong railroad and highway intermodal connections	High cost of financing maritime infrastructure	Increase marine repair and specialty services to support marine transportation	services		
High degree of labor specialization and concentration		Repositioning of Crowley to serve other market segments			
	THE RESIDENCE	Develop capacity as a marine firefighting training center			
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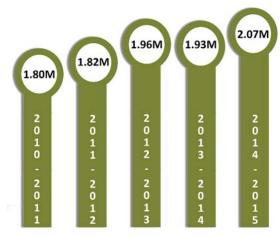
### 2.4 Tourism and Outdoor Recreation

The Prince William Sound region continues to attract visitors from around the world as well as Alaskans for a variety of activities, events, and recreational pursuits. Visitation to Alaska was slow to recover following the Great Recession. The Tourism and Hospitality cluster was deemed fully recovered in 2012, when visitation first exceeded 2008 levels. Figure II.E.14. recounts visitation levels to the state between 2010 and 2015.

The state tourism marketing program increased dramatically during this time to offset visitor losses due to the recession. However, funding was reduced by nearly half in SFY2016. It was nearly eliminated for SFY2017, but a modest \$1.5 million was allocated. Figure II.E.15, summarizes the state tourism marketing budget from 2012 -2017.

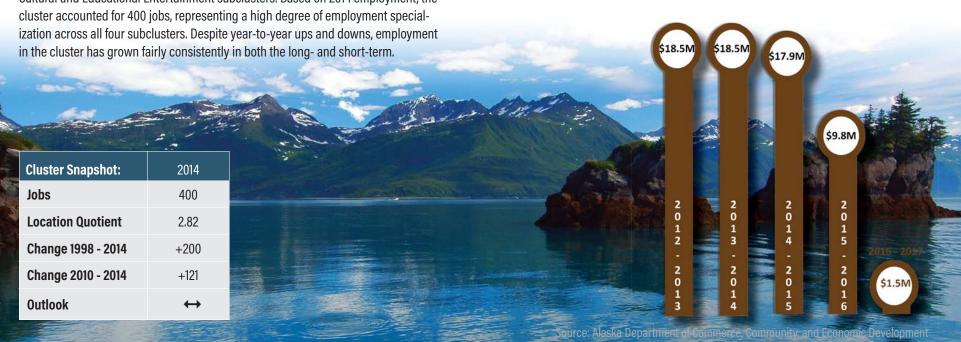
The Tourism and Outdoor Recreation cluster is comprised of the Accommodations and Related Services, Other Tourism Attractions, Tourism Related Services, and Cultural and Educational Entertainment subclusters. Based on 2014 employment, the

Figure II.E.14. Alaska Visitor Volume, 2010-2011 through 2014 - 2015



Source: Alaska Visitor Statistics Program

Figure II.E.15. Alaska Tourism Marketing Budget 2012-2013 through 2016-2017



Economic Growth for the Prince William Sound Region

Based on the 2011 Alaska Visitor Statistics Program VI: Summer 2011, the estimated volume of nonresident visitors identified for the PWS region were as follows:

Whittier: 224,000
Prince William Sound: 73,000
Valdez: 57,000

The study also revealed that most visitors to the region traveled for the purpose of vacation/pleasure (79 - 84%). Top activities for visitors to the region were:

Shopping	70 - 77%
Wildlife Viewing	68 - 73%
Hiking/Nature Walks	51 - 53%
Day Cruises	53 - 57%

Visitors travel to the region via cruise ship, packaged tours, the Alaska Marine Highway, the Alaska Railroad, scheduled and charter air, and personal vehicles and recreational vehicles. It is not possible to quantify each mode of travel or to fully separate visitor versus resident travelers. However, Figure II.E.16. presents traceable passenger volumes by transportation mode for those modes that are officially tracked. These figures are not cumulative, as visitors may use multiple modes of travel.

Figure II.E.16. Prince William Sound Transportation Modes and Volumes 2010 - 2015

		2010	2011	2012	2013	2014	2015
Alaska Marine Highway System (all PWS ports combined)	Port Departures	987	1,060	1,030	1,026	992	862
	Embarking Passengers	44,742	49,554	43,986	43,136	45,536	37,297
	Disembarking Passengers	44,817	49,682	44,065	43,352	45,519	37,183
	Embarking Vehicles	18,259	19,792	18,165	17,168	17,845	14,704
	Disembarking Vehicles	18,157	19,684	17,995	16,894	17,610	14,555
Alaska Railroad	Combined Embarking and Disembarking Passengers	76,910	80,263	94,942	92,993	87,336	94,751
Air Passengers	Enplanements	33,595	33,878	32,148	29,090	29,137	31,150
Cruise Passengers	Embarking	N/A	N/A	N/A	77,922	75,340	71,075
	Disembarking	N/A	N/A	N/A	80,489	76,640	71,854

Source: Alaska Department of Transportation, Alaska Railroad Corporation, Federal Aviation Administration, Cruise Line Agency Alaska

Sport fishing in Prince William Sound remains an important activity for visitors as well as Alaskans. Figure II.E.17. recounts sport fishing participation for the PWS region from 2009 through 2014. Overall, the number of anglers is down by two percent, but days fished remains unchanged. Year-to-year variations can be significant. Fifty businesses are engaged in guided saltwater sport fishing, while 11 businesses are engaged in freshwater guided sport fishing. Figure II.E.18. summarizes these two sectors.

Cordova, Valdez, and Whittier levy taxes on transient accommodations, car rentals, and cruise passenger transfers. Revenues from these visitor-paid taxes vary from year to year depending on visitor volumes, modes of travel, and, in some cases, the pricing of visitor services. Overall, visitor-paid taxes have increased over the past three years. Figure II.E.19. summarizes these taxes for the period 2009 through 2015.

Figure II.E.19.. Sport Fishing Activity in Prince William Sound 2009 - 2015

Tax	Transient Occupancy <sup>1</sup>	Car Rental <sup>2</sup>	Passenger Transfer <sup>3</sup>	% Change
2009	\$500,161	\$ 9,752	\$194,236	
2010	\$488,650	\$12,662	\$186,277	-2.4%
2011	\$534,528	\$12,380	\$193,222	7.6%
2012	\$505,014	\$16,065	\$215,909	-0.4%
2013	\$506,983	\$14,603	\$233,770	2.5%
2014	\$503,289	\$11,139	\$283,889	5.7%
2015	\$532,066	\$14,517	\$270,666	2.6%

<sup>&</sup>lt;sup>1</sup>Cities of Cordova and Valdez

<sup>3</sup> City of Whittier

Source: Alaska Department of Commerce, Community , and Economic Development, Alaska Taxable

Figure II.E.17.. Sport Fishing Activity in Prince William Sound 2009 - 2014

Year	Anglers	% Change	Days Fished	% Change
2009	55,438		169,541	
2010	58,262	5.1%	150,206	-11.4%
2011	53,806	-7.6%	141,041	-6.1%
2012	44,671	-17.0%	120,881	-14.3%
2013	49,539	10.9%	158,836	31.4%
2014	54,326	9.7%	169,590	6.8%
% Change 2009 - 2014	-2.0%		0.0%	

Source: Alaska Department of Fish and Game, Sport Fishing Survey

Figure II.E.18.. Sport Fishing Charters and Guides in PWS 2014

		Charter/Gu Fishing	iided	Freshwate	er/Guided Fi	shing
Community	Businesses	Vessels	Trips	Businesses	Guides	Trips
Valdez	27	31	732			156
Whittier	18	20	580	11	20	
Other	5	6	134			

Source: Powers, B., D. Sigurdsson. (2016). Participation, Effort, and Harvest in the Sport Fish Business/ Guide Licensing and Logbook Programs, 2014. Alaska Department of Fish and Game, Divisions of Sport Fish and Commercial Fisheries.

<sup>&</sup>lt;sup>2</sup> City of Cordova

Strengths	Weaknesses	<b>Opportunities</b>	Threats
Growth in visitors to Alaska, exceeding 2 million visitors in 2015 for the first time	Lack of regional tourism identity and marketing effort	Increase collaboration between communities that desire increased visitation	Drastic reduction in state tourism marketing funding
Scenic beauty and wilderness values  Strong statewide tourism marketing program	Many of the largest tourism operators in the region are based elsewhere	Increase participation and use of Alaska Green Adventure designation	One vessel ferry service resulted in large reductions in passenger volume
since 2010	Many jobs are seasonal and low-paying	Increase utilization of marine parks through marine trails and public-private partnership	Potential for ongoing reductions in ferry service, parks management, sport fish
Most public lands allow recreational and multiple use	Complex regulation, permitting, and reporting for commercial use of public lands	Increase economic value of recreationists	programs, and other state infrastructure  Possible new or increased statewide tourism
Growing reputation for outdoor adventure sports including heliskiing, fat tire biking, and	High costs to visit the region	Promote region to small boutique cruise category and yacht market	taxes or general taxes
kayaking	Quality of lodging and restaurants is not well-rated by visitors		Waiting lists for moorage in small boat harbors
Glaciers, wildlife, and mountains are top interests for Alaska visitors			
Region is easily accessible to Alaskans for recreation			
			Ellis III

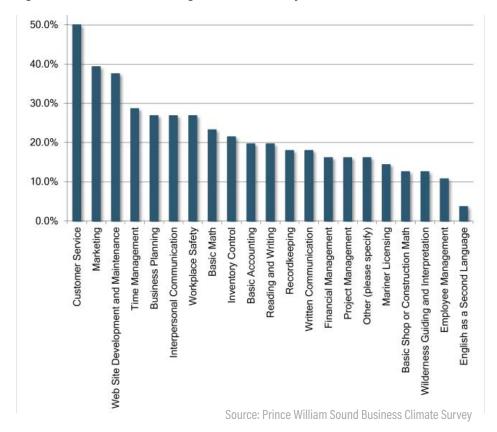
### 2. Factors Affecting Economic Performance

#### **Workforce Readiness and Retention**

PWS employers have reported ongoing issues and concerns regarding worker availability, workforce readiness, and retention of qualified workers. In 2014 and 2015 PWSEDD conducted surveys of regional business owners and managers to explore these issues. The results of both surveys are available online at pwsedd.org.

Most of the respondents (45.6%) indicated that their business has only one employee. Employers that responded reported workforce size ranging from one to 150 employees, with an average workforce of 9.4 employees. Seven out of ten employers reported having

Figure II.E.20.. Workforce Training Needs Identified by PWS Businesses



a year-round, full-time workforce. More than half (58%) of all respondents indicated using year-round, part-time staff. More than 40 percent of employers reported using seasonal staffing to address their workforce needs.

In the past year, most employers (73.7%) reported no change in their staffing. However, one-fifth of employers reported increasing staff, while 5.3 percent reported a decrease in staffing levels. Three-quarters (75%) of those employers that increased staff reported difficulties in expanding and recruiting new staff. A range of issues were cited as reasons for recruitment difficulties. These reasons included pre-employment barriers (criminal record, inability to pass screenings, no transportation or child care), lack of work maturity skills, and lack of training or technical skills.

Employers were asked to rank training opportunities that would best address their current needs. Customer Service (50%), Marketing (39%), and Web Site Development (38%) were ranked the highest among 21 options. Other topics included advanced accounting and technical maritime skills. Figure II.E.20. summarizes responses for all training categories.



**Economic Growth for the Prince William Sound Region** 

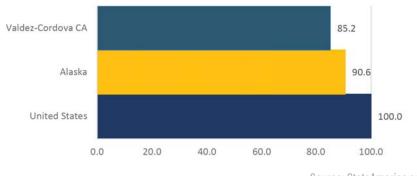
#### **Innovation Assets**

The U.S. Economic Development Administration sponsors an assessment of rural regions' innovation capacity in partnership with Purdue University and other research partners. An interactive assessment tool presents these findings on the county or census area level as an Innovation Index. The innovation capacity of the nation is established as a baseline and set at a score of 100. Any score above 100 indicates strong innovation capacity and performance. Conversely, any score below 100 may indicate a deficiency in innovation capacity or under performance in innovation investments. The index presents investment and performance data from ranging from 1997 to 2013, but some metrics are based on narrower time frames, generally more recent years.

Figure II.E.21. presents a comparison of Innovation Index scores for the VCCA, the state of Alaska, and the national baseline. Both the VCCA (85.2) and the state (90.6) score below the national baseline.

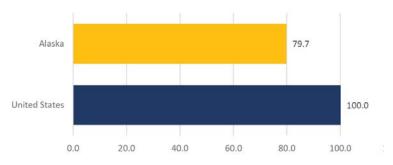
The state context establishes the level of resources available for businesses and entrepreneurs in comparison to national standards. The context looks primarily at science and engineering graduates and research and development as a proportion of the population. Alaska scored 79.6 in comparison to the national standard, indicating under performance or investment in these innovation assets. While these factors are not included in the

Figure II.E.21.. Innovation Index for the Valdez-Cordova Census Area with comparison to Alaska and U.S.



Source: StatsAmerica.org

Figure II.E.22.. State Context for Innovation in comparison to U.S.



Source: StatsAmerica.org

composite index, the availability or lack of these resources impact the capacity to innovate within the state. Figure II.E.22. illustrates the comparison between state (79.7) and national context for innovation capacity.

The Innovation Index is comprised of four composite sub-indices. A closer look at the sub-indices and the constituent variables provides a deeper understanding of the region's innovation assets and deficits.

The first two sub-indices measure the ability of the region's population and workforce to innovate and account for 60 percent of the overall index score. Human capital (30%) combines educational attainment, population growth, the share of high technology jobs, and knowledge-based technology jobs as a share of total employment. For the VCCA, the proportion of working age adults with some college or associate's degrees exceeds both state and national levels. However, the region lags both state and national levels on all other human capital metrics, particularly in the percent of young adults in the population. This dynamic was discussed in regard to the aging of the population in section x. Overall, the VCCA scored 82.8 on Human Capital, in comparison to a score of 92.9 for the state. See Figure II.E.23.

Economic dynamics is the focus of the second sub-index (30%). This sub-index examines the availability of venture capital, broadband density and penetration, establishment churn, and establishment size. Of note for the VCCA, is the absence of in-region sources of venture capital and firms with a workforce of 10,000 or more. A high volume of small firms and a strong churn rate are positive aspects of the region's economic dynamics. See Figure II.E.24.

Figure II.E.23.. Valdez-Cordova Census Area - Human Capital in comparison to Alaska and U.S.

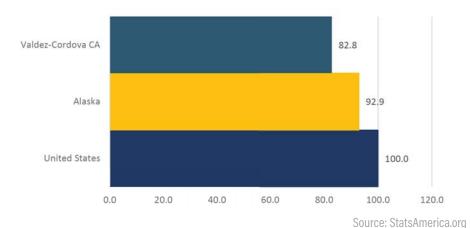
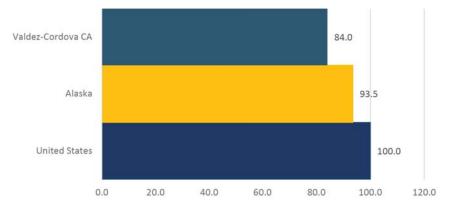


Figure II.E.24. Valdez-Cordova Census Area - Economic Dynamics in comparison to

Alaska and U.S.



Source: StatsAmerica.org

The balance of the Innovation Index focuses on the outputs from growth and innovation. Productivity and Employment (30%) is the first sub-index in this category. Variables in this sub-index include high-tech employment, job growth, gross domestic product per employee, and patents per 1,000 workers. The data indicates the region (84.6) slightly outperformed the state, which scored 80.6. The VCCA exhibited strong growth in high-tech jobs and increases in GDP per worker. However, overall job growth and patents per 1,000 workers scored significantly lower than state or national standards. See Figure II.E.25.

The final component of the Innovation Index is Economic Well-Being (10%). This sub-index is based on compensation, growth in per capita personal income, net migration, unemployment, and poverty. The state of Alaska scored 104.7, exceeding the national baseline. The VCCA scored 98.2. The poverty level and change in per capita personal income were positive regional indicators in comparison to both state and federal scores. However, net migration and compensation for both wage and salary and proprietor's income negatively impacted the score. See Figure II.E.26.

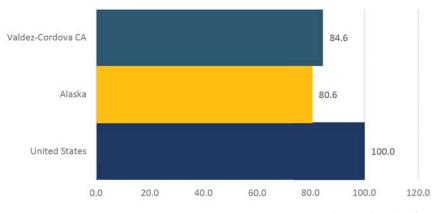
Overall, a weak state context for venture capital and research and development as well as regional weaknesses in population growth, proportion of technology jobs, conversion of small firms to larger firms, and low-volume of regionally-held patents contribute to less innovation capacity than either the state or national standards.

The Prince William Sound region has demonstrated strong innovation capacity in the Seafood Harvesting, Production, and Processing cluster. The region's capacity for aquaculture and the development of shellfish mariculture represent a capacity to expand the resource base in the sector while maintaining wild fishery stocks. Additionally, the marketing of Copper River salmon demonstrated the viability and opportunities of promoting regional salmon brands.

Environmental and ecosystem monitoring, assessment, and disaster response is another area where the region has demonstrated innovation capacity. The Prince William Sound Science Center, the Alaska Ocean Observing System, and the Regional Citizens Advisory Council all represent a specialty sector that developed as a result of the 1989 Exxon Valdez oil spill. Much of the research conducted as a result of the spill is not domesticated to the region. The region should examine ways to capture more of this activity in place as well as find ways to export expertise and governance in this specialty area.

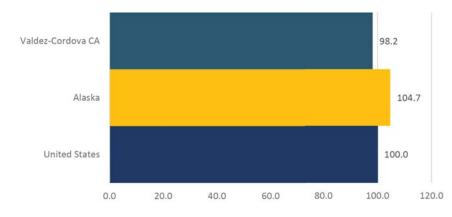
**Economic Growth for the Prince William Sound Region** 

Figure II.E.25 Valdez-Cordova Census Area - Productivity and Employment in comparison to Alaska and U.S.



Source: StatsAmerica.org

Figure II.E.26.. Valdez-Cordova Census Area -Economic Well-Being in comparison to Alaska and U.S.



Source: StatsAmerica.org

#### **Financial Resources**

The volume, composition, and trend of financial assets held within the region provide insights into its capacity for further economic development. This section will examine personal per capita income, property valuations, bank deposits, and known sources of business and development finance.

Per Capita Personal Income Based on per capita personal income (PCPI) data for the VCCA, incomes have grown over the past five years. On a nominal basis, per capita personal income increased from \$47,845 in 2010 to \$56,571 in 2015. This reflects more than 18 percent growth over the five year period. However, adjusting these figures to constant 2010 dollars moderates the 2015 PCPI to \$52,107 or an increase of just under nine percent. Figure II.E.27. illustrates the trend and composition of per capita personal income from 2010 to 2014.

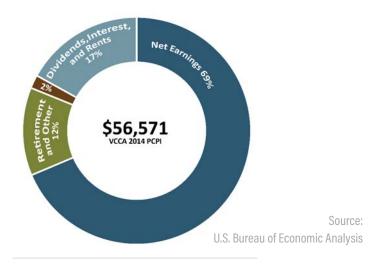
On average, net earnings are the greatest source of PCPI at 69 percent. Dividends, interest, and rents are the next most likely source of PCPI at 17 percent. Transfer payments form the remaining 14 percent of average PCPI. Most of the latter (12%) is retirement and disability benefits, veterans benefits, medical benefits, and similar payments. The final 2 percent is comprised of income maintenance benefits such as Supplemental Security Income, various tax credits, Supplemental Nutrition Assistance Program benefits, and other forms of family and income assistance. Figure II.E.28. further details the sources of PCPI in 2014.

Figure II.E.27.. Average Per Capita Personal Income by Source - Valdez-Cordova Census Area 2010 - 2014

	2010	2011	2012	2013	2014
Net Earnings	\$33,481	\$35,306	\$37,384	\$36,810	\$38,820
Retirement and Other	\$5,721	\$5,837	\$5,493	\$5,526	\$7,091
Other Transfer Payments	\$1,188	\$1,265	\$1,269	\$1,206	\$1,077
Dividends, Interest, and Rents	\$7,454	\$8,621	\$10,925	\$9,018	\$9,582
Total PCPI	\$47,845	\$51,029	\$55,072	\$52,559	\$56,571

Source: U.S. Bureau of Economic Analysis

Figure II.E.28.. Composition of 2014 Per Capita Personal Income Valdez-Cordova Census Area



<u>Property Valuations</u> The three organized cities in the region assess property taxes on real property. Whittier also assesses a local personal property tax. Figure II.E.29. summarizes full value determinations for each community from 2010 through 2015. Property values have changed significantly over the period. These changes are a result of additions to or deletions from the tax rolls, changes in full value determinations, changes in eligible exemptions, and other factors.

Figure II.E3.0. Property Tax Revenues in PWS Communities that levy property taxes

	Property Tax Revenues	Oil and Gas Property Tax Revenues
2010	\$7,199,414	\$43,171,481
2011	\$7,324,872	\$43,945,443
2012	\$6,549,250	\$38,969,201
2013	\$6,820,818	\$34,542,787
2014	\$7,288,683	\$53,666,557
2015	\$8,108,827	\$43,526,194

 $\textbf{Figure II.E.29..} \ \textbf{Taxable Property Values in PWS Communities that levy property taxes 2010-2015}$ 

PWS Community	Annual Full Value Determination	2010	2011	2012	2013	2014	2015	% Change 2010 - 2015
	Locally Assessed	\$256,566,100	\$270,698,500	\$259,001,900	\$292,774,100	\$276,883,000	\$320,804,900	25.0%
Cordova	State Assessed	\$10,051,320	\$8,693,360	\$8,597,760	\$12,498,190	\$10,873,470	\$10,857,140	8.0%
	Total Assessed	\$266,617,420	\$279,391,860	\$267,599,660	\$305,272,290	\$287,756,470	\$331,662,040	24.4%
	Locally Assessed	\$330,773,900	\$357,421,900	\$386,665,800	\$373,286,700	\$373,985,400	\$393,242,800	18.9%
Valdez	State Assessed	\$2,151,164,860	\$1,943,877,120	\$1,882,726,260	\$2,676,728,930	\$2,303,919,180	\$2,169,013,640	0.8%
	Total Assessed	\$2,481,938,760	\$2,301,299,020	\$2,269,392,060	\$3,050,015,630	\$2,677,904,580	\$2,562,256,440	3.2%
	Locally Assessed	\$122,091,200	\$122,755,400	\$79,124,300	\$76,178,600	\$76,617,900	\$83,650,000	-31.5%
Whittier	State Assessed	\$1,694,250	\$1,466,760	\$1,456,930	\$2,115,680	\$1,839,810	\$1,834,690	8.3%
	Total Assessed	\$123,785,450	\$124,222,160	\$80,581,230	\$78,294,280	\$78,457,710	\$85,484,690	-30.9%

Source: Alaska Department of Commerce, Community, and Economic Development, Alaska Taxable

Economic Growth for the Prince William Sound Region

<u>Bank Deposits:</u> Wells Fargo and First National Bank Alaska (FNBA) have branch locations in Cordova and Valdez. According to the FDIC, deposits in the PWS region totaled \$125.5 million as of June 30, 2010. As of June 30, 2015, in region deposits totaled \$138.6 million. This represents a nominal increase of 10.3 percent and a real increase of 1.6 percent. As of 2015, Wells Fargo held 55.6 percent of total deposits while FNBA held 44.4 percent.

While these figures most likely do not capture all banking activity for the region, it provides a baseline for ongoing tracking.

<u>Public Sources of Business Financing</u>: The State of Alaska offers low interest loans to commercial fishers, aquaculture associations, mariculture operators, other fisheries businesses, and small and rural businesses. According to the Alaska Division of Economic Development, it currently holds 130 loans to borrowers in the PWS region. Figure II.E.31. outlines the current loans in the region held by the SOA.

Figure II.E.31.. State of Alaska Business and Aquaculture Loans in Prince William Sound

	# of Loans	Current Balances
Commercial Fishing	81	\$6,330,574
Small Business	9	\$1,011,655
Fisheries Enhancement	40	\$31,052,854
Total	140	\$38,845,083

Source: McCaulay, Andy (May 26, 2016). Personal Communication. Alaska Division of Economic Development, Financing Section.

The Alaska Industrial Development and Export Authority (AIDEA) currently has one open loan for a business in the PWS region.

Other sources of public financing such as the U.S. Small Business Administration and U.S. Department of Agriculture, Rural Development are also active in the region.

#### **Business, Personal, and Property Taxes**

According to the Tax Foundation, Alaska ranks 50th in terms of state and local tax burden as of 2012. The combined burden is 6.5 percent compared to the national average of 9.9 percent. On average, Alaskans paid \$3,229 per capita in state and local taxes in 2012.

The Tax Foundation's 2016 Business Tax Climate Index ranks Alaska third, a slight improvement from its fourth place ranking in 2014. The index is based on a composite of each state's ranking in five areas: corporate taxes (30th), individual income taxes (1st), sales taxes (5th), unemployment insurance taxes (21st), and taxes on residential and commercial property (21st). Although Alaska's corporate income tax is rated as particularly burdensome, the lack of other broad-based taxes strongly moderates its impact.

Local governments levy property, sales, and excise taxes to pay for city services. Alaska Statutes Title 29, Chapter 45 governs the authority of boroughs and cities to levy taxes. Figure II.E.31. summarizes selected state and local taxes.

Figure II.E.32. **Selected State and Local Fees and Taxes Prince William Sound Communities and State of Alaska** 

Chenega Bay Cordova Tatitlek Valdez Whittier Alaska **Business License** N/A \$50/year N/A \$0/year1 N/A \$50/year **Property Tax** N/A 11.53 mills<sup>2</sup> N/A 20 mills 8 mills N/A **Oil and Gas Property Tax** 20 mills Sales Tax N/A 6% N/A N/A  $0-5\%^3$ N/A **Bed Tax** 6% N/A 6% N/A N/A N/A Cruise Tax N/A N/A N/A N/A \$2.50/pp \$34.50/pp<sup>4</sup> 6% **Car Rental Tax** N/A N/A N/A N/A 10% **RV Rental Tax** 3% **Corporate Income**  $0 - 9.4\%^{5}$ 

<sup>1</sup> licensing fees currently waived by Valdez City Council <sup>2</sup> down 0.54 mills from 2014, but up overall 2.1 mills from 2013 <sup>3</sup> Seasonal sales tax – 0 percent Oct – Apr; 5 percent May – Sep <sup>4</sup> Commercial Passenger Vessel Excise Tax per AS 43.52.200-295 and 15 AAC 52

Source: Alaska Department of Revenue, Alaska Department of Commerce, Community, and Economic Development, Alaska Taxable 2015

In addition to licensing fees, the State of Alaska levies a suite of taxes on the seafood harvesting and processing sector. These taxes vary depending on the species of fish landed, the port of landing, harvester type, the type of business operation, and many other factors. See Figure II.E.33.

Figure II.E.33. State Taxes Specific to Seafood Harvesting and Processing

	Fee or Rate	
Fisheries Business License	\$25/year	
Fisheries Business Tax <sup>1</sup>	3 - 5% 1 - 3 %	
Fisheries Resource Landing Tax	1 - 3%	
Regional Seafood Development Tax	1.5%	Source:
Seafood Marketing Assessment	0.5%	Alaska Departmen
Salmon Enhancement Tax	2%	of Revenue

The Salmon Enhancement Tax is a local option tax implemented by a vote of salmon commercial permit holders. The proceeds of the tax go to the Prince William Sound Aquaculture Corporation.

The Regional Seafood Development Tax was implemented in 2004 to fund regional seafood

regional branding and marketing efforts. Formation of an RSDA is done through local option by the vote of existing permit holders. In the PWS region, the RSDA is the Copper River/

development associations (RSDA) for the purpose of promoting Alaska seafood through

Prince William Sound Marketing Association, which is based in Cordova.

Several state taxes, including the Oil and Gas Property Tax, Fisheries Business Tax and the Cruise Vessel Passenger Tax, provide for a revenue sharing option with local governments.

In the 2015 Prince William Sound Business Climate Survey, the majority of regional businesses rated the local and state business climates as excellent or above average (55-60%). However, the top concern at the local and federal levels was taxation. New statewide sales and income taxes were proposed, but not passed during the recent legislative session.

Economic Growth for the Prince William Sound Region

### **Bonding Capacity**

The State of Alaska (SOA) established the Alaska Municipal Bond Bank Authority (AMBBA) in 1975. Its mission is to assist communities and other authorized borrowers in financing capital projects such as schools, harbors, public buildings, and water and sewer systems.

While the AMBBA is a public corporation and legally independent of the SOA, its board includes representatives from both the public and private sector. The commissioners of the departments of revenue and commerce, community, and economic development fill the public seats on the board.

The AMBBA has an "AA+" rating from Fitch Ratings and an "AA" rating from Standard & Poor's Rating Service. Its general obligation bond portfolio totaled \$941 million at the close of the state fiscal year 2015. Most ratings agencies have the State of Alaska on a watch list pending resolution of its \$4 billion budget shortfall for SFY2017. This matter was not resolved during the last legislative session and continues to concern rating agencies.

Most Alaska communities are risk- and debt-averse and generally do not have the experience or expertise to float bonds independently. The AMBBA bundles multiple projects and uses its expertise and high rating to obtain favorable terms on behalf of the represented borrowers.

The City of Cordova's general obligation indebtedness as of 2015 totaled \$14,285,000 or \$6,249 debit per capita. The City of Valdez's general obligation indebtedness as of 2015 totaled \$53,500,000 or \$13,269 debit per capita.

### Rurality

The U.S. Department of Agriculture, Economic Research Service (ERS) develops analyses about economic and policy issues involving rural development. In order to facilitate analysis and discussion of rural issues, the ERS has developed a series of rural classifications to characterize rural qualities and the degree of rurality.

Using the ERS' 2013 Rural-Urban Continuum, the Valdez-Cordova Census Area is classified as a nonmetropolitan county. Within the nonmetropolitan designation, there are six possible rankings from four (urban population of 20,000 or more, adjacent to a metropolitan area) to

nine (completely rural or less than 2,500 urban population, not adjacent to a metropolitan area). The Valdez-Cordova Census Area is ranked nine on the Rural-Urban Continuum.

The ERS also produces a County Typology for each county in the nation. Under this schematic, the Valdez-Cordova Census Area was determined to be a nonmetropolitan area with an economic dependence on the recreation sector.

A third classification system is FAR Codes, which stands for "far and remote." Under the FAR Code designations for 2010, only the PWS communities of Cordova and Valdez are classified. FAR Codes measure a combination of low population size to high geographic remoteness. Four levels are designated with level four indicating the lowest population density and greater remoteness from both high and low order goods and services. Both Cordova and Valdez were assigned FAR Codes of "4".

#### **Transportation and Shipping Costs**

Due to its remote rural nature, transportation and shipping costs are compounding factors to a high cost of living and doing business in the region. Limited access to some communities complicates planning and logistics for vehicle, equipment, and large freight shipments. Many factors affect the costs of shipping in addition to standard point to point service. Most shipping companies only provide custom quotes based on route, weight, dimensions, and other factors.

Business climate survey respondents identified high transportation and shipping costs as a top concern. In some cases, the region has realized some easing of transportation and shipping costs with reductions in fuel prices over the past two years. However, the reduction in ferry service in 2015 and the threat of ongoing reduced service has had a negative impact on households and businesses in the region.

### **Housing Costs and Availability**

According to the Alaska Housing Finance Corporation, there were an estimated 3,281 housing units in the PWS region in 2014. For the region as a whole, six out of ten housing units are owner-occupied. This rate of owner-occupied housing is more than five percent lower than both the state (64%) and national (63.8%) levels.

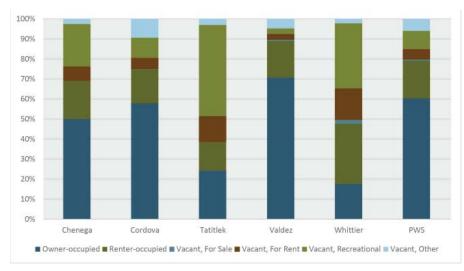
Renter-occupied units account for nearly 20 percent of the region's housing units. Vacant properties comprise the remaining 20 percent. Of these vacant units, less than one percent (0.7%) are properties for sale. The remaining units are rentals (5.2%), recreational (9.2%), or other properties (5.9%).

These housing patterns are replicated at the community level in Chenega Bay, Cordova, and Valdez. However, owner-occupied housing is significantly lower in Tatitlek and Whittier, while recreational properties represent a far greater proportion of the housing stock.

Housing availability quickly becomes an issue for any entity seeking to do short- or long-term business in the region. Temporary workforce housing is available for in Valdez. However, more is needed and the NPRHA is adding five new units in 2016 with the possibility of more in the future.

Figure II.E.34 illustrates the composition of the housing stock for each community as well as the region.

Figure II.E.34. Composition of Housing Inventory by Occupancy Status for the Prince William Sound Region and Communities - 2010 - 2014



Source: ACS 5-Year Estimates 2010-2014

Nearly four percent (3.6%) of housing units in the region are overcrowded or severely overcrowded. This is slightly higher than the national rate of overcrowding (3.1%) but significantly lower than the state rate (6.0%).

<u>Housing Inventory:</u> An age profile of the region's housing stock reveals that nearly four in ten units (38.1%) were built during the 1970s. The housing inventory continued to expand into the 1980s (19.9%). Prior to this period, the greatest housing growth occurred during the post-war 1950s. Nearly nine out of ten (88.5%) housing units were built prior to 1990. Figure II.E.35. presents the age profile of the region's housing stock.

Between 2011 – 2015, new housing activity in the region totaled 59 single family units and 4 multi-family units.

<u>Housing Affordability</u>: Based on the American Communities Survey 2010 – 2014, 409 households (13.4%) in the region have mortgages or rents that exceed 30 percent of household

Figure II.E.35. Age Profile of Prince William Sound Housing Inventory as of 2011

	Chenega Bay	Cordova	Tatitlek	Valdez	Whittier	PWS
Pre- 1940s	5	130	0	48	1	184
1940s	0	19	0	34	61	114
1950s	2	201	6	34	216	459
1960s	0	89	8	162	6	265
1970s	11	219	14	1,031	3	1,278
1980s	19	304	35	307	4	669
1990s	5	109	3	133	0	250
2000- 2011	0	42	10	80	3	135

Source: U.S. Census Bureau and Alaska Housing Finance Corporation

Economic Growth for the Prince William Sound Region

income. Exceeding the 30 percent threshold is generally viewed as a housing affordability issue. Nearly one-third (32.7%) of households in Chenega Bay exceed the 30 percent income threshold.

Median housing values range from a low of \$66,300 in Whittier to \$279,800 in Cordova. In comparison to the statewide median housing value (\$246,300), housing in the region is generally affordable. Median housing values in Chenega Bay, Cordova, and Valdez exceeds the national median (\$175,700) by a range of x to x percent. Median gross rents range from a low of \$575 per month in Chenega Bay to \$1,172 per month in Valdez.

Figure II.E.36 presents median housing values, rents, and affordability measures for owner-occupied and rental units in the region.

The North Pacific Rim Housing Authority (NPRHA) is the tribally designated housing entity that operates throughout the Chugach region, of which PWS is a portion. NPRHA receives federal formula funds through the U.S. Department of Housing and Urban Development, Office of Native American Programs in accordance with existing housing stock, population, and housing needs. NPRHA also partners with the Alaska Housing Finance Corporation to facilitate various state programs within the region. The agency administers a suite of low-interest loan, rent subsidy, and housing maintenance programs. In order to facilitate its work, NPRHA has developed and operates the harbor facilities in Chenega Bay and Tatitlek. It also serves as a business services agency to other government and nonprofit entities within the region; providing accounting, information technology, and consulting services.

Figure II.E.36. Housing Values, Rents, and Affordability for Owner-Occupied and Rental Units in Prince William Sound

	Chene	ga Bay	Corc	lova	Tati	tlek	Val	dez	Whi	ttier	PV	VS
Median Housing Value	\$232	2,100	\$279	,800	\$166	5,700	\$183	3,700	\$66	,300	N	A
Median Gross Rent	\$575		\$844 \$613		\$1,172		\$683		NA			
	Units	%	Units	%	Units	%	Units	%	Units	%	Units	%
Mortgaged Units w/ costs> 30%	9	18.4%	38	3.4%	2	2.6%	90	5.9%	0	0.0%	139	4.5%
Nonmortgaged Units w/costs > 30%	2	4.1%	58	5.2%	2	2.6%	0	0.0%	3	1.0%	65	2.1%
Rental units with costs > 30%	5	10.2%	67	6.0%	0	0.0%	113	7.4%	20	6.9%	205	6.7%
Total Housing Units > with costs > 30%	16	32.7%	163	14.7%	4	5.2%	203	13.2%	23	8.0%	409	13.4%

Source: U.S. Census Bureau and Alaska Housing Finance Corporation

### **Public Safety**

The region's public safety needs are addressed through a variety of state and local resources, depending on the community and other jurisdictional circumstances.

The cities of Cordova, Valdez, and Whittier have municipal police departments with sworn police officers. Cordova and Valdez also have municipally-operated jails. The City of Whittier recently expanded its coverage to include the community of Girdwood. This contractual service expanded the Whittier police force to xx sworn officers.

The Alaska State Troopers (AST) have primary responsibility for law enforcement in most rural villages, including Chenega Bay and Tatitlek. A Village Public Safety Officer (VPSO) serves as an onsite public safety presence, responding to and investigating misdemeanor violations. In the event of a felony, high risk, or complex crime, VPSOs are authorized to stabilize volatile situations, preserve crime scenes and evidence, and coordinate with the AST until a trooper is dispatched. The VPSOs for Chenega Bay and Tatitlek are funded through the AST budget. Chugachmuit administers these positions via a VPSO grant issued to its EMS and Public Safety Program through the Alaska Department of Public Safety.

Figure II.E.37.. Public Safety Resources in Prince William Sound Communities

Public Safety Service		Chenega Bay	Cordova	Tatitlek	Valdez	Whittier				
Local Law Enforcement	Sworn Officers	N/A	5	N/A	11	3*				
	Municipal Jail	N/A	✓	N/A	✓	N/A				
	Troopers	Detachment E Crown Point	Post 9 2 - 3 Troopers	Detachment B	Post 40 1 Trooper	Detachment E				
Alaska State Troopers	Wildlife Officers		✓		✓					
	VPS0s	✓	N/A	✓	N/A	N/A				
	Registered Fire Department	Chenega Bay Fire Department Micro-Rural FD	Cordova Volunteer Fire Department	Unregistered Micro-Rural FD	Valdez Fire Department	Whittier Volunteer Fire Department				
	Career Staff	N/A	4	N/A	11	1.5				
Fire and Public Safety	Volunteers		20 - 30			9 - 15				
rife and rubiic Safety	Ambulances		2 Medic Units			2 Medic Units (ALS)				
	Speciality Units				Alyeska Pipeline Service Company Fire & Rescue					
	EMT/EMS				7 Technicians					
Local Emergency Planning Committee		Valdez Local Emergency Planning Committee								

Source: Alaska Department of Public Safety, PWS Communities

Economic Growth for the Prince William Sound Region

The Alaska Department of Public Safety (DPS) collects uniform crime reports (UCR) from community public safety officials. Only the cities of Cordova and Valdez regularly submit UCR data.

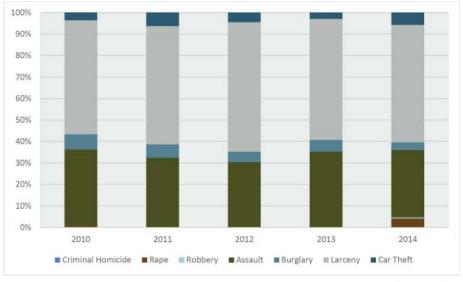
Between 2010 and 2014, just under 1,000 criminal offenses were reported. On average, this totals 199 criminal offenses per year.

Property crimes (burglary, larceny, and car theft) account for the majority of reported offenses; ranging from 64 to 70 percent actual offenses.

Crimes against persons (criminal homicide, forcible rape, robbery, and assault) totaled 30 to 34 percent of reported offenses over the time frame. Most of these offenses were simple or aggravated assaults not involving a weapon. Criminal homicide, rape, and robbery are relatively rare occurrences.

Figure II.E.38 summarizes known offenses for the region for 2010 to 2014.

Figure II.E.38.. Offenses Known to Law Officials Prince William Sound Region 2010 - 2014



Source: Alaska Department of Public Safety



Section III: SWOT Analysis

**Economic Growth for the Prince William Sound Region** 

# **SECTION III: SWOT ANALYSIS**

# Strengths, Weaknesses, Opportunities, and Threats

The economic, social, and civic evolution of the Prince William Sound region is marked by tremendous growth and opportunity as well as dramatic losses and challenges. While the region experiences a nominally high level of prosperity, the distribution of opportunity and growth potential varies significantly from community to community. PWSEDD champions the advancement of the region, its communities, and its citizens by prioritizing regional assets and opportunities, while advocating and supporting community-level developments.

### Six Pillars™ Framework

After reviewing the region's recent past, economic trends, and long-standing circumstances, PWSEDD opted to use a slightly modified version of the Six Pillars™ Framework to focus its discussion of strengths, weaknesses, opportunities, and threats. SWOTs with regard to various economic sectors are noted in Section II: Regional Background. The Six Pillars™ Framework focuses on the foundations and underpinnings of future economic growth for the region.

The Six Pillars™ Framework was developed by the Florida Chamber Foundation. It is used on a statewide, regional, and local level in Florida. Other jurisdictions outside of Florida have also adopted the framework. It serves as an organizational model for strategic planning and harnesses diverse viewpoints into a common and consistent conversation about economic development and a desirable future economy.

Each of the Six Pillars™ is examined in the proceeding pages. The resulting SWOT Analysis is based on feedback provided by the PWSEDD Board of Directors, membership, other regional citizens, and responses provided in the 2015 Business Climate Survey.



Pillar	Strengths	Weaknesses	Opportunities	Threats
Talent Supply and Education  Systems and resources to educate and train the region's current and future workforce are in place and aligned with economic opportunities.	Pioneering spirit and legacy of persevering against great odds  Strong K-12 schools with high attendance rates and blended graduation rate of 77%  In-region community college with curriculum and associate's degree programs tailored to local employment opportunities and employer requirements  Scholarship and continuing education funding available through ANCs	Small population base  High relative costs per K-12 student  No in-region 4-year degree programs (brick and mortar)  Limited in-region resources for skilled trade apprenticeship  Limited in-region resources for other postsecondary training  75% of employers report recruiting difficulties and barriers to employment  Employers cite pervasive deficiencies in workforce readiness and technical skills	Collaborate with ADOLWD and regional entities on Prince William Sound Job Center  Adopt a 90% graduation rate goal for all school districts  Create a strong Adult Basic Education network  Work with other coastal regions and communities on maritime workforce development  Work with districts to integrate ATIA's online tourism certificate program in CTE curricula  Develop CTE and postsecondary training linkages and dual credit arrangements  Integrate workforce readiness skills in high school grading rubrics  Develop program to promote work maturity skills	Projected declines in population  Aging population  Loss of working age population  Potential for closures of small schools  Elimination of planned increases in the State of Alaska's base student allocation  Wide-ranging budget cuts and program curtailment within the University of Alaska system.

Pillar	Strengths	Weaknesses	Opportunities	Threats
Innovation and Economic Development  Incentivize and support innovation, new business formation, and business retention.	Local chambers of commerce and visitor bureau in the three largest communities  Strong increase in new business formation in recent years  Legacy of innovation in fisheries and hatchery development  Pioneered ecosystem monitoring and preservation  Successful locally grown businesses that have expanded beyond the local market	Limited entrepreneurial and business support services with a physical presence in the region  Weak state context and low level of innovation assets within the region  Highest value activity in the ecosystem monitoring and preservation sector is not domesticated to the region  Lack of venture capital sources within the region and limited VC resources in the state  Small firms do not typically grow beyond market size limitations  High percentage of home-based businesses	Partner with SBDC, PTAC, and local organizations to expand access to entrepreneurial and business support services  Partner with DED, AIDEA, and SBA to increase use of public financing programs within the region  Host/sponsor PWS business plan competition as an entry point for the statewide spring competition  Map business permitting requirements with local government, USFS, and other major landowners and government agencies  Explore options for co-working and incubation resources  Establish a business mentor network within the region or with complimentary regions.	Restricted access to public lands and resources  Reductions in state-funded marketing programs for tourism and seafood  Low business survival rate  Global weaknesses in oil and gas threaten oil distribution and marine transportation sectors  Increases in business permitting and regulations at all levels of government

Pillar	Strengths	Weaknesses	Opportunities	Threats
Infrastructure & Growth Leadership  Energy, transportation, housing, communication and public safety systems to ensure a vibrant region.	Year-round ice free ports  Expansion of Valdez Small Boat Harbor  Marine lifts in three largest communities  Exporter of power and telecom to other areas of the Valdez-Cordova Census Area  Exporting public safety coverage to communities outside of the region  Increased sources of alternative/renewable energy  High level of satisfaction with available telecommunication services  Recently completed PWS Regional Energy Plan identifies additional opportunities to expanded alternative and renewable energy sources as well as energy efficiency and conservation opportunities	Lack of affordable broadband connectivity in some communities/ areas  Aging or limited harbor infrastructure in some communities  Continuing reliance on diesel for power and space heating  Aging housing stock and limited development of new inventory  Vulnerability of isolated, stand-alone systems  Limited emergent and specialty healthcare available	Participate in statewide dialogue on restructuring a sustainable ferry system  Research viability of a regional ferry authority  Increase alternative energy sources; particularly hydroelectric  Increased coordination between communities on emergency response planning  Organize a regional effort to increase energy efficiency and conservation in residential, commercial, and public buildings  Promote the PWS Regional Energy Plan and encourage local adoption and action	Calls to privatize ferry service in PWS  Calls to reduce or eliminate the Power Cost Equalization could dramatically impact energy costs in most communities  Reductions and possible elimination of state revenue sharing with municipalities  Reductions in the state capital budget will impact maintenance of existing infrastructure and buildings as well as the potential for new projects

Pillar	Strengths	Weaknesses	Opportunities	Threats
Business Climate & Competitiveness  Fair and equitable legal, regulatory, and tax policies that encourage and sup- port business formation and continuity.	55-60% of owners rate business climate excellent or above average  Strong trend in new business formation  Majority (54%) of businesses report increased sales in the past three years	High energy costs  High transportation costs  Small local market  Low business survival rate  Three-quarters of regional businesses do not have plans or insurance coverage to ensure business continuity  Low or limited business formation in three communities	Increased engagement and partner- ship with state and federal agencies on resource and land planning  Promote emergency preparedness and business continuity planning  Sponsor data security awareness and training  Increase awareness and utilization of state product preference and place of origin programs	State's fiscal status  World oil market  Declining throughput in TAPS  Producers selection of Nikiski as a terminus for the AK-LNG project  Implementation of broad-based state taxes  Implementation of new industry specific taxes  More than three-quarters of businesses cite deficient or nonexistent data security practices

Pillar	Strengths	Weaknesses	Opportunities	Threats
Civic and Governance Systems  Engaged citizenry, effective local governance, ethical and just society	Local governments and state governments are accessible to citizens  Multiple levels of volunteer opportunities available in all communities (municipal, tribal, village, regional, extra-regional)  Multiple levels of local governance (municipal, tribal, village, regional, extra-regional)  Strong cooperatives with local governance to deliver basic services  Current state administration has strong ties to the PWS region	Various regional schemes make regional cohesion more challenging  Diffuse political connections create challenges in garnering attention and priorities for PWS  Voter turnout of less than 40 percent on average in recent elections  Multiple levels of local governance (municipal, tribal, village, regional, extra-regional)  Rural nature of the region and rugged individualist nature of citizens contributes to anti-government attitudes	PFD voter initiative to increase voter registration  Promote increased civic engagement through online and mobile access to local and tribal governments, regional boards and commissions, and other volunteer opportunities  Create and support regional models that advance education and public services  Increase engagement with finalization of USFS Chugach National Forest Plan  Participate in update of state land management plan for PWS region  Increase regional cohesion and participation in economic development planning and implementation	Continuing or increased voter apathy and citizen disenfranchisement due to polarizing national election cycle  High burn-out rate of tribal and municipal administrators makes it difficult to maintain momentum  High burn-out rate of volunteer leadership  ARDOR program reauthorized but not funded in the SFY2017 budget. Future funding remains uncertain.

Pillar	Strengths	Weaknesses	Opportunities	Threats
Quality of Life and Quality Places  Sustainable communities, healthy lifestyles, and unique places	Beauty and scenic values of the Sound and surrounding landscape  Abundant natural resources  Desirable maritime, rural and subsistence lifestyles  Rich diversity in the Eyak, Alutiiq, and Den'aina cultures and ongoing cultural assets, programs, and preservation efforts.  Vibrant community arts, events, and entertainment  Poverty rate lower than state or national rates	Limited individual private property ownership  Lack of local food production  Deteriorating historic buildings  High cost of living  35% of school enrollment qualifies for free and reduced lunch program  Regional poverty rate is lower than state or national levels, but increasing in recent years  Limited connections to serve as the basis for regional collaboration and cohesion	Develop an Alumni and/or Lone Eagles strategy to attract high-earning individuals with specific lifestyle motivations  Continued efforts to preserve and showcase indigenous cultures  Create quality of life index to quantify health and well-being of regional residents and communities  Develop regional strategy to integrate Alaska Food Policy Council recommendations including a Community Food Emergency and Resilience Plan  Inventory threatened historic structures and identify resources to preserve or redevelop these structures	Climate change  Seismically active region and history of major natural disasters  Extreme weather events  Impact of remoteness and isolation on the cost of living, quality of life, and regional cohesion  3 – 5 day food supply in the advent of a disruption of the food supply  Lack of long-term state fiscal plan



Section IV: Strategic Direction and Action Plan

**Economic Growth for the Prince William Sound Region** 

# SECTION IV: STRATEGIC DIRECTION AND ACTION PLAN

# A. Strategic Direction

### 1. Strategic Focus Areas

PWSEDD framed the strategic direction for **Sound Opportunities** with five guiding principles. The focus of PWSEDD is regional, so the plan focuses on programs, projects, and activities that have broad regional significance. The plan must be realistic and doable in the context of PWSEDD's staff and financial resources. Actions are prioritized according to prospective impact, potential or existing regional partnerships, and organizational capacity. The plan must acknowledge and respect local needs, wishes, and exclusions. Finally, the plan must be flexible enough to address opportunities and issues that will undoubtedly arise over the course of the next five years.

With these guiding principles in mind, the CEDS planning process has identified five strategic focus areas:

Business Retention and Expansion Workforce Readiness and Retention Expansion of the Economic Base Infrastructure Development Regional Cohesion and Partnership

#### **Business Retention and Expansion**

New business formation has been strong, particularly in the past two years. However, further analysis of business licenses revealed that the business survival rate averages less than six years. The Business Climate Survey reinforced these findings. It also revealed deficiencies in business planning, emergency preparedness, and continuity and secession planning.

Throughout the CEDS planning process, the challenges of operating a business in a rural region with high operating costs were frequently cited. However, the lack of local business support programs and difficulties in accessing statewide programs added to these challenges.

#### **Workforce Readiness and Retention**

A variety of workforce issues were identified as a potentially limiting factor to economic growth. A small, aging, and declining population contributes to a number of workforce issues now and for the future economy. Three-quarters of employers cite barriers to employment as the top reason for not being able to recruit and hire locally. Half of all employers cite the need for basic work maturity skills and customer service training.

Increased partnership and collaboration amongst educational institutions, employers, and workforce alliances will be needed to prioritize and address current and emerging workforce issues.

### **Expansion of the Economic Base**

As a remote, rural region in Alaska, the PWSEDD, local governments, businesses, and other stakeholders frequently acknowledged that economic development must be approached differently. Traditional business recruitment strategies are not feasible. Additionally, industries and economic opportunities are unevenly distributed across the region with local specialization in various sectors. This local specialization creates both opportunities and vulnerabilities.

The greatest commonality across the region is reliance on maritime infrastructure and marine services. These assets are essential to the prosecution of the region's major industries, community operations, and quality of life for the region's residents.

The Tourism and Outdoor Recreation cluster is also seen as a growth opportunity, but not all communities desire the introduction or growth of this sector. These concerns or limitations must be factored into regional approaches to expanding this sector. During planning activities, businesses, and residents identified opportunities to optimize tourism and outdoor recreation growth, capture a greater share of revenues derived from visitors coming to the region, and introduce regional approaches to destination marketing. Continuous and reliable service from the Alaska Marine Highway System is viewed as an essential factor in growing this sector.

#### **Infrastructure Development**

The Prince William Sound region is remote and rural. There is limited infrastructure.

Throughout the planning process, restoring reliable service and ensuring the future of the Alaska Marine Highway System in the region was cited as the most critical need. The need to maintain, update, and expand maritime infrastructure is also a concern and opportunity.

Other important infrastructure needs were also cited, including continued development of alternative and renewable energy sources. Reductions in the state capital budget and ongoing pressure to reduce the state operating budget are likely to result in deferred maintenance of state-owned infrastructure as well as delays in long-planned projects. Creative partnership arrangements and financing will be needed to maintain existing infrastructure and keep new projects moving forward.

### **Regional Cohesion and Partnerships**

Prince William Sound is a unique region. Its communities are largely isolated and disconnected from one another, save for the Alaska Marine Highway. The region lacks direct representation in Juneau with its legislators split between the Mat-Su Valley and Kodiak. Locally, there can be three or more layers of local governance that require administration, leadership, and civic involvement.

None of these attributes are inherently detrimental to region's future economic growth.

However, the disconnectedness and diffuse leadership give rise to the need for stronger regional cohesion. Issues surrounding the Alaska Marine Highway are but one example of how combining efforts amongst municipal and tribal governments, Alaska Native Corporations, and other stakeholders could garner greater attention and results. The region must seek ways to coordinate legislative agendas, capitalize on its ties to the Walker Administration, and leverage shared and local interests to create strong regional outcomes. A shared and coordinated approach to regional issues, including an approved CEDS is an essential ingredient for the region's future success.

#### **Community Priorities**

While the CEDS focus is regional, it is also part of PWSEDD's mission to support local priorities. The region's five communities submitted the following top priorities:

#### **Chenega Bay**

- Develop a marine service center to include a store, seasonal restaurant, and fuel service
- Improve the marine ramp to allow for monthly winter ferry service
- Replace the community center
- Provide business and entrepreneurial support to activate use of seven halibut permits
- Extend water and sewer utilities into planned subdivision
- Develop comprehensive energy systems including efficient generators, solar panels, and battery bank

#### Cordova

- Reliable schedule/Alaska Marine Highway System
- Heavy Vessel Travel Lift/ 300 metric tons
- Ship yard expansion
- More available housing
- Million Dollar Bridge repairs
- Crater Lake Water and Power Project
- Cordova South Harbor Rebuild

**Economic Growth for the Prince William Sound Region** 

#### **Tatitlek**

- Develop Retail and Commercial Master Plan
- Harbor improvement to increase ferry service
- Develop a Housing Master Plan to include energy efficient housing
- Roadway and trail maintenance and improvements
- Renovate Village Council House
- Improve education and training opportunities
- Implement weatherization, modernization and other energy efficiency measures
- Develop Ecotourism Master Plan
- Develop a Village Facilities Master Plan to address community facility, public spaces, infrastructure, and marine facilities
- Landfill for tank farm
- Mini-mart

#### Valdez

- Promote housing affordability/availability
- Boat harbor expansion, improve marine related facilities, industries
- Reduce energy costs and increase access to power
- Beautify and redevelop downtown area
- Increase year-round recreation and tourism opportunities
- Link and expand college programs to existing new industries

- Increase Arctic and marine related training programs
- Enhance senior and developmental disability services and opportunities

#### Whittier

- Harbor Upgrades
- Shotgun Cove Road completion/Phase 5
- Head of Passage Canal Project/Design, Engineering
- Levee on Whittier Creek
- •
- •
- •

Many of these community priorities align with and are complimentary to the action plan outlined on the following pages.

### 2. Action Plan 2016 - 2021

BUSINESS RETENTION AND EXPANSION: Strengthen the local business sector by increasing new business formation by 20 businesses, increasing business retention by five percent, and improving business preparedness and continuity.

- 1. Increase the five year average of new local business creation by five percent from 81 to 85 businesses between 2016 2020. (4 8 jobs/year x 5 years = 20 40 jobs)
- 2. Increase the ten-year average of local business retention by five percent from 42 to 45 businesses between 2016 2020. (3 6 jobs/year x 5 years = 15 30 jobs)
- Increase business preparedness for natural and man-made disasters with 30 percent of all businesses having designated working capital reserves and a business continuity plan in place by 2021. (business survey in 2015 and 2020/2021)

#### Tasks:

Sponsor business development and financing workshop in conjunction with the Small Business Administration, UA Business Enterprise Institute, Alaska Division of Economic Development, Prince William Sound College, and private lenders.

Conduct face-to-face BRE interviews with 15 small-to-medium enterprises to determine barriers to growth and continuity.

Develop awareness and advocacy program for business preparedness

Partner with FEMA and DMVA/DHSEM on one business continuity planning workshop or webinar.

# WORKFORCE READINESS AND RETENTION: Improve workplace maturity and technical skills in the local workforce.

1. Reduce seasonally adjusted annual unemployment rate from 9.5 percent to no more than 8.1 percent by 2021. (70 jobs based on a 1.4 point reduction in the unemployment rate over the five year period).

- Increase concentration in secondary career and technical education (CTE) aligned
  with regional employment opportunities through increased partnerships with the Alaska Department of Education and Early Development, Chugach School District, Valdez
  City Schools, Cordova City Schools and Prince William Sound College
- Increase employer satisfaction with the workplace maturity and technical skills of workers aged 35 years old and younger. (Employer survey 2014 versus 2019/2020).

#### Tasks:

Convene regional CTE educators and employers to identify resources and priorities

Partner with Alaska Maritime Works to align regional efforts with statewide plans and other local initiatives to develop maritime sector CTE and training opportunities.

Apply for workforce development grants to extend the Voyage to Excellence or similar program throughout the district

# EXPAND ECONOMIC BASE: Increase regional economic base with focused efforts in the tourism and maritime sectors

- Increase tax revenues from tourism activities by an average of 2.6 percent per year over the period of 2016 – 2020. (transient occupancy, car rental, and cruise ship transfer taxes in Cordova, Valdez, and Whittier)
- 2. Increase employment in the tourism and maritime sectors by 1 2 percent
- 3. Increase local property tax revenues from commercial and industrial property through increased private investment of \$200,000 by 2020.

#### Tasks:

Inventory and assess the maritime support sector in the region

Develop online marine services directory

Promote the online marine services directory

Economic Growth for the Prince William Sound Region

# INFRASTRUCTURE DEVELOPMENT: Advocate for and facilitate the development of public infrastructure and redevelopment to support regional economic development

- 1. Advocate to retain regional access via the Alaska Marine Highway System. (AMHS passenger traffic report)
- 2. Reduce regional energy costs, reliance on diesel fuel, and dependency on the Power Cost Equalization program. (AEA energy profile)
- 3. Leverage local infrastructure investments with state and federal grants and appropriations
- 4. Advocate for the assessment, mitigation, and rehabilitation of Formerly Used Defense Sites (FUDS) and other brownfield sites

#### Tasks:

Monitor and advocate for AMHS routes within the region.

Partner with Southeast Conference on its contract to develop a new business model for the AMHS

Seek funding to evaluate the feasibility of a municipal authority or privatization of the PWS ferry routes.

Facilitate household energy efficiency program in partnership with the Alaska Housing Finance Corporation, North Pacific Rim Housing Authority, and RuralCap Energy Wise Program.

Promote use of the Alternative Energy Loan Fund for energy retrofitting of commercial buildings.

Advocate for regional and community infrastructure projects with state and federal funding agencies.

Advance assessment and mitigation of brownfield issues at the Buckner Building

# REGIONAL COHESION: Increase regional cooperation and cohesion: planning, leader-ship

- 1. Revise regional Comprehensive Economic Development Strategy by June 30, 2016
- Increase scope and rate of partnerships and stakeholder participation in PWSEDD activities
- 3. Increase regional preparedness for natural and man-made disasters.

#### Tasks:

Complete the CEDS Revision by December 31, 2016.

Track and report attendance at all PWSEDD convened meetings, workshops, and events.

Advocate for the formation and coordination of Local Emergency Planning Committees (LEPCs) in Chenega Bay, Cordova, Tatitlek, and Whittier

Partner with the Division of Homeland Security, LEPCs, and other response agencies on staging an all community emergency drill to alternate between years when Alaska Shield is held.



Section V: Evaluation Framework

**Economic Growth for the Prince William Sound Region** 

# **SECTION V: EVALUATION FRAMEWORK**

# **A. Indicators of Regional Progress**

In June 2015, PWSEDD adopted a performance dashboard composed of indicators of regional progress. The dashboard uses a format similar to that adopted by the Institute for Strategy and Competitiveness. It contains six macro indicators. Each indicator is composed of three variables.

Determinations are made for each variable and indicator based on a "traffic light" model. If all variables are trending in a desirable direction, the indicator has a green light. A yellow light is assigned if the underlying variables show both positive and negative trends. If variables are uncertain or undetermined, an amber light is displayed. When all variables are trending in an undesirable direction, the indicator shows a red light.

The five indicators and the underlying variables for each are depicted in the figure to the right. In addition to these five indicators, PWSEDD tracks general economic trends as measured by personal per capita income, labor force size, and the composition of personal income. This dashboard is available and updated on the pwsedd.org web site.

In addition to the indicators of regional progress, PWSEDD will track and report progress on the Sound Opportunities Action Plan. The evaluation framework for the action plan follows on page 101. It will be posted on the CEDS project page on pwsedd.org and updated twice each year during the planning period.

Indicators of Regional Progress						
BUSINESS RETENTION AND EXPANSION: Strengthen the local business sector thru new businesses, increased business survivability, and greater preparedness.						
New Business Formation	Increase Business Survival	% of Businesses Prepared for Emergency				
<b>WORKFORCE READINESS AND RETENTION:</b> Improve workplace maturity and technical skills in the local workforce.						
Reduce Unemployment	Reduce Unemployment Increase CTE Concentrators Employer Satisfaction with Workers					
<b>EXPAND ECONOMIC BASE:</b> Increase regional economic base with focused efforts in the tourism and maritime sectors.						
Tourism Employment and Tourism Taxes	Fisheries Participation and Gross Value/Pound	Commercial and Industrial Property Values				
INFRASTRUCTURE DEVELOR public infrastructure and re	PMENT: Advocate for and faci edevelopment	litate the development of				
AMHS Passenger Volume Energy Efficient Housing Stock Leveraged Funding for Public Infrastructure						
REGIONAL COHESION: Increase regional cooperation and cohesion.						
CEDS Adoption	Stakeholder Participation	Regional Preparedness				

# **B. Action Plan Evaluation Framework**

Action Plan Evaluation Framework	In Process	On Target	Delayed	Accomplished
BUSINESS RETENTION AND RESILIENCE:				
Sponsor one business development and financing workshop in partnership with agencies and private lenders				
Conduct 15 face-to-face BRE interviews				
Develop business preparedness awareness campaign				
Sponsor one business continuity workshop or webinar				
WORKFORCE READINESS AND RETENTION:				
Convene CTE educators and employers to plan and prioritize				
Partner with Alaska Maritme Works to expand CTE curricula and training				
Apply for workforce grant to develop work maturity skills program				
EXPAND ECONOMIC BASE:				
Inventory and assess the maritime support sector in the region				
Develop an online marine services directory				
Promote the online marine services directory				
INFRASTRUCTURE DEVELOPMENT:				
Monitor and advocate for Alaska Marine Highway service in the region				
Seek funding/resources to evaluate municipal authority for PWS ferry routes				
Promote household and commercial building energy efficiency				
Advocate for regional and community projects with funding partners				
Advance assessment and mitigation of Buckner Building brownfield issues				

Action Plan Evaluation Framework	In Process	On Target	Delayed	Accomplished
REGIONAL COHESION:				
Complete CEDS revision by December 31, 2016				
Track and report PWSEDD attendance and participation				
Advocate for increased regional participation in local emergency planning				
Partner with agencies and responders on an all communities emergency drill				

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### **Thank You**

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### **Gold Level Investors**



**Silver Level Investors** 



### **Bronze Level Investors**









### **Sustaining Municipal and Tribal Governments**



Tatitlek IRA Council







### **Small Business and Individual Members**

Anchor Inn
Euro Alaska Tours
MarPet, Inc.
Prince William Sound Museum
Patience Andersen Faulkner

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U.S. Economic Development Administration

Prince William Sound Economic Development District Board of Directors

PWSEDD CEDS Technical Advisory Committee

Prince William Sound Business Climate Survey Respondents

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Alaska Department of Environmental Conservation

Alaska Department of Labor and Workforce Development

Alaska Department of Natural Resources

Alaska Department of Public Safety

Alaska Department of Transportation and Public Facilities

Alaska Energy Authority

Alaska Housing Finance Corporation

Alaska Railroad Corporation

Alyeska Pipeline Service Company

Harvard University Institute for Strategy and Competitiveness

Chugach Alaska Corporation

Connect Alaska

Cruise Line Agency Alaska

Dawson Moore

MRV Architects

Native Village of Chenega

Native Village of Eyak

Native Village of Tatitlek

**PND Engineers** 

Prince William Sound College

Powell Design and Mapping

StatsAmerica

U.S. Census Bureau

U.S. Cluster Mapping Project

U.S. Bureau of Economic Analysis

US. Department of Transportation

Valdez Fishing Derbies

Valdez Native Tribe

WHPacific

